

Office of the Registrar
Duquesne University
Pittsburgh, Penna. 15219



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Duquesne University

Undergraduate
Catalog

1977-1978

Directory

ADDRESS—University, 600 Forbes Avenue, Pittsburgh, Pa. 15219

Telephone: Call specific Centrex (Direct Dial) number (see following);
for other offices, call 434-6000

ADMISSION—Director of Admissions, Administration Building, First Floor

Telephone: (412) 434-6220/6221/6222

ADVISORS

College of Liberal Arts and Sciences, College Hall, Room 215

Telephone: (412) 434-6394

School of Business and Administration, Rockwell Hall, Room 403

Telephone: (412) 434-6277/6278

School of Education, Canevin Hall, Room 214

Telephone: (412) 434-6118/6119

School of Music, Room 315

Telephone: (412) 434-6083

School of Nursing, College Hall, Room 629

Telephone: (412) 434-6548

School of Pharmacy, Mellon Hall of Science, Room 421

Telephone: (412) 434-6385

ROTC—University Hall

Telephone: (412) 434-6614

CAMPUS MINISTRY—Administration Building, First Floor

Telephone: (414) 434-6020

CAREER PLANNING AND PLACEMENT—Administration Building, Third Floor

Telephone: (412) 434-6644/6645/6646

CASHIER—Payment of Tuition and Fees, Administration Building, Ground Floor

Telephone: (412) 434-6585/6586/6587

CHAPLAIN—Administration Building, First Floor

Telephone: (412) 434-6020/6021

COUNSELING AND LEARNING CENTER—Administration Building,

Third Floor

Telephone: (412) 434-6661/6662

DEAN OF STUDENTS—Duquesne Union, Sixth Floor

Telephone: (412) 434-6657/6658

FINANCIAL AID—Loan, Scholarship, Student Employment Applications,

Administration Building, Ground Floor

Telephone: (412) 434-6607/6608/6609

FOREIGN STUDENT ADVISOR—Duquesne Union, Room 603

Telephone: (412) 434-6669

HEALTH SERVICE—Duquesne Towers, Second Floor

Telephone: (412) 434-7822/7823

IDENTIFICATION CARDS—Office Services, Rockwell Hall, Lower Level

Telephone: (412) 434-6191

INFORMATION CENTER—For University Events, Duquesne Union, Third Floor

Telephone: (412) 434-6632/6633

PSYCHOLOGICAL COUNSELING—Center for Testing and Research

Telephone: (412) 434-6561/6562/6563

REGISTRAR—Transcripts and Records, Rockwell Hall, Concourse

Telephone: (412) 434-6212/6213/6215

RESIDENCE LIFE—Housing, Duquesne Towers, Room 111

Telephone: (412) 434-6655/6656

SAFETY AND SECURITY—Security Building

Telephone: (412) 434-6001/6002/6003

TESTING BUREAU—Administration Building, Third Floor

Telephone: (412) 434-6204/6208

UNIVERSITY INSURANCE OFFICER—Administration Building, Second Floor

Telephone: (414) 434-6058

DUQUESNE UNIVERSITY
PITTSBURGH, PENNSYLVANIA 15219

P 21

Undergraduate Catalog 1977-1978

College of Liberal Arts and Sciences
School of Business and Administration
School of Education
School of Music
School of Nursing
School of Pharmacy
Reserve Officer Training Corps

It is the policy of Duquesne University to admit applicants who are best qualified to profit from opportunities which the University offers for intellectual, spiritual, and social growth. In general, admission is based upon past academic performance, scholastic ability, and personal characteristics. Information about religious preference, racial characteristics, and ethnic origin is not considered by the Committee on Admissions.

The information contained in this catalog is accurate to the date of publication. Faculty listings are as of Spring 1976.

The University reserves the right to change any provision or requirement designated herein, including fees and tuition and room and board, and to effect the withdrawal of any student whose conduct at any time is not satisfactory to the University.

Contents

Directory (Inside front cover)

Campus Map (Inside back cover)

Degrees and Programs Offered, vi

Academic Calendar—1976-1977 and 1977-1978, vii

THE UNIVERSITY	1
History, 1; Philosophy and Objectives, 1; The Setting, 2; Academic Year and Summer Sessions, 2; Physical Facilities, 2; Accreditation and Affiliation, 4; Evening Study, 5; Summer Sessions, 6.	
ADMISSION	7
Office, 7; Policy, 7; Entrance Requirements, 7; Application—New First-Year Students, 8; Application—Other Categories, 8; Advanced Placement, 11; College Level Examination Program, 11; Credit Hour Bank, 11.	
EXPENSES	13
Fees and Tuition, 13; Room and Board, 15; Payments and Other Credits, 16.	
FINANCIAL AID	18
Principles of Aid, 18; Sources of Aid, 19; Aid from Departments and Schools, 23.	
REGISTRATION	28
Official Registration, 28; Change of Schedule, 29; Late Registration, 29; Cross-Registration, 29; Semester Grade Reports, 30; Transcripts, 30; Confidentiality of Records, 30.	
SCHOLASTIC POLICIES	31
Academic Advisor, 31; Auditing Courses, 31; Cancellation of Courses, 31; Class Attendance, 31; Classification of Students, 31; Course Examinations, 32; Credit by Examination, 32; Grading System, 32; Quality Point System, 33; Repeating Courses and Course Retrogression, 33; Pass/Fail Electives, 33; Student Standing, 34; Dean's List, 35; Graduate Courses for Undergraduate Credit, 35; Graduation Requirements, 35; Honors, 36; Unit of Credit, 36; Transfer Within the University, 36; Withdrawal from a Course, 36; Withdrawal from the University, 37; Student Handbook, 37.	

STUDENT LIFE	38
Helping Services, 38; Activities and Facilities, 40; Student Government, 42; Student organizations, 42.	
COLLEGE OF LIBERAL ARTS AND SCIENCES	45
History, 45; Philosophy and Objectives, 45; Curricular Requirements, 45; Academic Requirements, 46; Programs, 46; Academic Regulations, 47; Course Descriptions and Department Requirements: Biological Sciences, 48; Chemistry, 52; Classics, 54; Economics, 58; English, 62; Fine Arts, 67; History, 69; Journalism, 74; Mathematics, 77; Modern Languages and Literatures, 79; Philosophy, 83; Physics, 87; Political Science, 92; Psychology, 95; Sociology, 99; Speech Communication and Theatre, 102; Theology, 106.	
SCHOOL OF BUSINESS AND ADMINISTRATION	111
History, 111; Philosophy and Objectives, 111; Degree, 112; Bureau of Research and Community Services, 112; Student Organizations, 113; Divisions, Programs, and Course Descriptions: Quantitative Science, 115 (Analytic Methods, 115; Finance, 116; Accounting, 118); Behavioral Science, 120 (Law Administration, 121; Management, 122; Marketing, 124); Economic Science, 125.	
SCHOOL OF EDUCATION	129
History, 129; Selection and Admission, 129; Curriculum, 129; Student Organizations, 130; Honor Awards, 130; Teacher Certification, 131; Class Attendance, 131; Degree, 131; Programs: Early Childhood Education, 131; Elementary Education, 132; Music Education, 133; Secondary Education, 133; Special Education, 135; Course Descriptions, 136.	
SCHOOL OF MUSIC	141
History, 141; Philosophy and Objectives, 141; Admission, 142; Advisement, 142; Special Fees, 142; Degrees, 143; Equipment, 143; Student Organizations, 143; Honor Awards, 144; Teacher Certification, 144; Recital Attendance, 144; Theology Requirement, 144; Programs: Piano, 144; Organ, 145; Voice, 146; Orchestral Instrument, 147; Music Education, 148; Music Therapy, 149; Course Descriptions, 151.	
SCHOOL OF NURSING	175
History, 175; Philosophy, 175; Objectives, 176; Admission Requirements, 176; Admission of Registered Nurse Students, 176; Second Baccalaureate Degree Program, 177; Special Fees, 177; Student Organizations, 177; Honor Awards, 178; Graduation Requirements, 178; Program of Study, 178; Registered Nurses, 179; Suggested Curriculum Plan, 179; Course Descriptions, 180.	

SCHOOL OF PHARMACY	183
History, 183; Philosophy and Objectives, 183; Programs: Pharmacy, 184; Medical Technology, 187; Radiological Health, 189; Admission, 190; Laboratory Fees, 191; Pharmacy Activities Fee, 192; Regulations, 192; Student Organizations, 193; Honor Awards for Graduating Students, 193; Graduation Requirements, 195; State Licensing, 195; Pharmacy Career Guidance Center, 196; Research Foundation, 197; Course Descriptions, 197.	
RESERVE OFFICER TRAINING CORPS	207
Programs, 207; Army ROTC Scholarships, 207; Department of Military Science Programs, 207; Course Descriptions, 209; ROTC Flight Training, 211; Air Force ROTC, 211.	
BOARD OF DIRECTORS	212
ADMINISTRATIVE OFFICERS	212
ADMINISTRATIVE DIVISIONS	213
ADMINISTRATION AND FACULTY	217
<i>Index</i>	244

All Degrees and Programs Offered in the University

SCHOOL	BACHELOR'S DEGREE	MASTER'S DEGREE	DOCTORATE
College of Liberal Arts and Sciences	Biology Chemistry Classics English French German History Journalism Mathematics Philosophy Physics Political Science Psychology Sociology Spanish Speech Theology		
Graduate School of Liberal Arts and Sciences		African Studies Biochemistry Botany Chemistry Classics English German History Mathematics Organic Chemistry Pharmaceutical Chemistry Pharmaceutics Pharmacology-Toxicology Philosophy Physical Chemistry Physical-Analytical Chemistry Political Science Psychology Religion and Personality Sociology Theology Zoology	Chemistry English Pharmaceutical Chemistry Philosophy Psychology
School of Business and Administration	Accounting Economics Finance Law Admin. Management Marketing	Accounting Administration Business Administration Business Information Systems Economics	
School of Education	Early Childhood Education Elementary Education Secondary Education Special Education	African Studies Elementary Education General Education Guidance and Counseling (Elementary) Guidance and Counseling (Secondary) Library Science Reading and Language Arts School Admin. and Supervision (Elem.) School Admin. and Supervision (Sec.) School Psychology Secondary Education Special Education	
School of Music	Music Education Music Therapy Conservatory	Applied Music Composition Music Education Theory Folk Arts	
School of Nursing	Nursing	Nursing	
School of Pharmacy	Medical Technology Pharmacy Radiological Health	Hospital Pharmacy Administration	
School of Law			Juris Doctor

Academic Calendar — 1976-1977 and 1977-1978

1977-1978

FALL SEMESTER—1977

July 29	Friday	Preregistration with Pay-By-Mail Option, Closes (Registration suspended after this date until Thursday, August 25)
August 25-27	Thursday through Saturday	Final Registration
August 27	Saturday	Latest Date to Cancel Fall 1977 Registration Without Penalty
August 29	Monday	Fall Semester Begins
September 5	Monday	Holiday: Labor Day
September 6	Tuesday	Latest Date to Register and for Change of Schedule (No remission of charges for reduced class schedule after this date)
September 10	Saturday	Latest Date for 80% Tuition Refund Upon Making a Complete Withdrawal
September 17	Saturday	Latest Date for 40% Tuition Refund Upon Making a Complete Withdrawal
September 24	Saturday	Latest Date for 20% Tuition Refund Upon Making a Complete Withdrawal
October 19	Wednesday	*Latest Date to Submit Mid-term Grades
October 19	Wednesday	Latest Date to Withdraw with W Grades
October 19	Wednesday	Undergraduate I Grade Conversion Date for 1977 Spring Semester and Summer Session Courses
October 24	Monday	Latest Date for December 1977 Graduates to Submit Thesis Outline
October 29	Saturday	Latest Date to Apply for December 1977 Graduation
November 1	Tuesday	Holiday: All Saints Day
November 7-18	Monday through Friday	Pre-registration for 1978 Spring Semester
November 23-27	Wednesday through Sunday	Holidays: Thanksgiving
November 28	Monday	Classes Resume
December 5	Monday	Latest Date for December 1977 Graduates to Submit Thesis and Schedule Comprehensives

*Does Not Apply to Graduate Arts and Sciences Students

December 8	Thursday	Holiday: Immaculate Conception
December 9	Friday	Pre-registration, with Pay-By-Mail Option, for Spring 1978 Closes (Registration suspended after this date until Tuesday, January 10)
December 14-20	Wednesday through Tuesday	Final Examinations
December 20	Tuesday	Semester Ends
December 20	Tuesday	Graduation for 1977 December Graduates

SPRING SEMESTER—1978

December 9	Friday	Pre-registration, with Pay-By-Mail Option, Closes (Registration suspended after this date until Tuesday, January 10)
January 10, 11	Tuesday and Wednesday	Final Registration
January 11	Wednesday	Latest Date to Cancel Spring 1978 Registration Without Penalty
January 12	Thursday	Spring Semester Begins
January 21	Saturday	Latest Date to Register and for Change of Schedule (No remission of charges for reduced class schedules after this date)
January 25	Wednesday	Latest Date for 80% Tuition Refund Upon Making a Complete Withdrawal
January 30	Monday	Latest Date for May 1978 Graduates to Submit Thesis Outline
February 1	Wednesday	Latest Date for 40% Tuition Refund Upon Making a Complete Withdrawal
February 4	Saturday	Latest Date for May 1978 Graduates to Apply for Graduation
February 8	Wednesday	Latest Date for 20% Tuition Refund Upon Making a Complete Withdrawal
March 3	Friday	*Latest Date to Submit Mid-term Grades
March 3	Friday	Latest Date to Withdraw with W Grades
March 3	Friday	Undergraduate I Grade Conversion Date for 1977 Fall Semester Courses
March 13-22	Monday through Wednesday	Pre-registration for 1978 Fall Semester
March 23-28	Thursday through Tuesday	Easter Vacation

*Does Not Apply to Graduate Arts and Sciences Students

March 29	Wednesday	Classes Resume
March 31	Friday	Latest Date for May 1978 Graduates to Submit Thesis and Schedule Comprehensives
April 24	Monday	Latest Date for May 1978 Graduates to Pay Accounts
April 27-29	Thursday through Saturday;	
May 1-3	Monday through Wednesday	
May 3	Wednesday	Final Examinations
To Be Announced		Spring Semester Ends
To Be Announced		Honors Day Exercises
To Be Announced		Baccalaureate Service
		Commencement



The University

HISTORY

Duquesne University opened its doors as Pittsburgh Catholic College of the Holy Ghost in 1878 with an enrollment of 40 students and a faculty of seven. By 1911 a university charter had been obtained and it was then decided to adopt the name Duquesne University. Dictated by enrollment growth and modern educational demands, planned physical expansion of the University began in 1950. The campus size has more than tripled from its early 12.5 acre area to its present 38.4 acres. With room to grow, Duquesne undertook a program of new construction, rehabilitation, and renovation which has transformed it into an educational facility ranking with the finest in the East.

Today it is an urban university with an enrollment of more than 8000 students in its eight schools. From the original school, which is now the present College of Liberal Arts and Sciences, have evolved the Graduate School (1911) and the School of Law (1911), Business and Administration (1913), Pharmacy (1925), Music (1926), Education (1929), and Nursing (1937). The University offers degree programs in 87 areas—34 at the baccalaureate level; 45 at the master's; and eight at the doctorate.

Duquesne has increased in size and stature over the years, and it is proud of its growth and latest physical facilities. It is aware, however, of the necessity of keeping these material assets in the proper perspective, for they are never more important than the spiritual, academic, and cultural education of the students who become part of the Duquesne family.

PHILOSOPHY AND OBJECTIVES

Duquesne University is a Catholic institution, but it is open to students of all religions and creeds. It is a community composed of people having common aims and is committed to the ideal of graduating men and women whose minds seek intellectual freedom and the pursuit of truth. The University seeks to develop students who have the ability to judge independently, to live with honest doubt, to interrelate facts and disciplines, to balance memory, reason, and imagination. In essence, the Duquesne student is to be a person whose mind is strong and healthy, a person fully aware of humanity and sensitively responsive to humanity's strengths and weaknesses.

The educational objectives of the University are to develop a sound philosophy of life through an understanding of spiritual, physical, intellectual, moral, social, and aesthetic aims and values. It strives to develop scholarship and continued

professional growth, a well-balanced personality, and an attitude of constant evaluation of oneself as an individual and as a member of the community.

Duquesne offers a wide variety of programs, courses, and curricula from which individuals may select freely in accordance with their desires and capabilities. In emphasizing the relationship of education to the social, cultural, and economic aspects of life, it seeks to produce graduates who, upon entering their chosen careers, will be effectively prepared to discharge their obligations to God, to their community, and to themselves as intellectual and moral beings.

THE SETTING

Duquesne's hilltop campus is a short five-minute walk from the business, shopping, and entertainment districts of downtown Pittsburgh. This new, dynamic "Renaissance City" is still one of the largest steel-producing cities of the world—but today it is so much more. Pittsburgh is a center for the fine arts, as well as the home of major-league baseball, football, hockey, and tennis teams.

Students from Duquesne and the eight other colleges and universities in the area attend performances of the world renowned Pittsburgh Symphony Orchestra, the Pittsburgh Opera, and the Pittsburgh Ballet Company in elegant Heinz Hall. In the summer the American Wind Symphony offers concerts on Pittsburgh's riversides. Other seasonal events enjoyed by everyone are the International Folk Festival and the Three Rivers Arts Festival. The theatregoer has a choice of entertainment which includes legitimate, commercial and summer theatre.

For fun and relaxation, Duquesne students can visit the Highland Park Zoo, the Conservatory-Aviary, Buhl Planetarium, Carnegie Museum, and Phipps Conservatory. Directly across the river from campus is Mount Washington, which is approached by roadway and two inclines, and offers a breathtaking view of the city and its surroundings.

Pittsburgh also has year-round sporting events. The Pittsburgh Pirates and the Steelers provide major-league baseball and football excitement in the new Three Rivers Stadium. Duquesne's nationally known basketball team, the "Dukes," plays in the Civic Arena—famous for its immense moveable dome.

In the area of participatory sports, golf, riding, fishing, and skiing are all available within a half-hour drive of the city.

ACADEMIC YEAR AND SUMMER SESSIONS

The regular year is divided into a Fall and a Spring Semester of 15 weeks each. In addition selected courses are offered in summer sessions that vary in length from three to eight weeks.

PHYSICAL FACILITIES

ADMINISTRATION BUILDING, "Old Main," houses the Executive Offices of the University, the Office of Admissions, Testing Bureau, Business Offices, Career Planning and Placement Center, Chaplain's Office, Counseling and Learning Center, and Financial Aid. Adjoining this building is the University Chapel which offers Mass daily.

ASSUMPTION HALL, a women's residence, is a four-story structure and has its own chapel and a recreation room.

BUSINESS AFFAIRS BUILDING contains the Cashier's Office where checks may be cashed and payments made to the University.

CANEVIN HALL, the oldest lecture hall on campus, was built in 1922; it was completely renovated and air-conditioned in 1968, and houses the School of Education, Curriculum Library, Institute of African Affairs, and Institute of Man.

COLLEGE HALL, a six-story classroom and office facility building, is the seat of the College of Liberal Arts and Sciences, the Graduate School, and 12 of their departments and faculties, and the School of Nursing. Special instructional facilities include journalism, speech, psychology, numerical analysis, multi-media, and practice skills laboratories.

MUSIC SCHOOL, built in 1966, has 73 pianos including 56 Steinways, 5 organs, and over 300 orchestral and band instruments available for student use. The school offers training and degrees in conservatory and public school music.

DUQUESNE TOWERS, the University's 17-story, double-tower residence houses 1200 men and women. A regulation swimming pool, located on the second floor, is open to all Duquesne students. The building also has an L-shaped dining room for 2,500 resident students, laundromats, and snack-bars. Each room has a telephone, and all rooms are air-conditioned.

DUQUESNE UNION is the center of campus activities. It includes offices for student organizations and interest groups, as well as the Office of the Dean of Students. Facilities include three dining areas, a ballroom and student lounge, and the Bookstore. The Recreation Center on the first floor features eight bowling lanes, pocket billiards, table tennis, a music listening room, and an arts and crafts room.

GYMNASIUM is open for general use of all Duquesne students. It is primarily a practice gym, which is used for both baseball and basketball practice, as well as intramural basketball and volleyball. All varsity basketball games are held at the Civic Arena. (Women's Gymnasium, *see University Hall*)

RICHARD KING MELLON HALL OF SCIENCE houses the Departments of Biological Sciences, Chemistry, and Physics of both the Graduate and Undergraduate Divisions of the University, as well as the School of Pharmacy. Designed by one of the world's greatest architects, Mies van der Rohe, the building won the "Laboratory of the Year" award for 1969. Instructional facilities include two large lecture halls each with a seating capacity of 248 persons.

ROCKWELL HALL is the home of the Schools of Business and Administration and the School of Law. Its Business Simulation Laboratory contains 12 conference rooms which are equipped with television cameras and microphones that make possible observation and recording of the activity in the individual conference rooms. The Law School's extensive library is open 24 hours a day.

ST. ANN HALL, is a women's residence with a capacity of 324 students. It is air-conditioned, has its own laundry, as well as a number of lounges, television rooms, a recreation room, and a snack room.

ST. MARTIN HALL, a 14-story residence, provides modern housing for 560 men. Laundry facilities and a reading-TV lounge are found on each floor. A central recreation area is on the second floor.

TRINITY HALL serves as the residence for the Holy Ghost Fathers.

UNIVERSITY HALL is currently headquarters for the Army ROTC Department and the campus Radio Station, WDUQ. It also houses the Women's Recreation and Athletics Office, gymnasium, and slimnastics room.

UNIVERSITY LIBRARY houses a collection of 367,000 bound volumes, subscribes to more than 3,500 periodicals, and contains an increasingly large collection of materials in microprint and other nonbook forms. Special resources include an extensive African Collection of more than 8,300 volumes; 190 periodical titles; and numerous tapes, records, and microfilm. Also notable is the Rabbi Herman Hailperin Collection of 3,000 books and manuscripts reflecting the history of Christian and Jewish intellectual relations, with specific reference to the Bible, during the Middle Ages.

ACCREDITATION AND AFFILIATION

UNIVERSITY

Accreditation

Middle States Association of Colleges and Secondary Schools
State Board of Education of the Pennsylvania Department of Education

Membership

American Association of Collegiate Registrars and Admissions Officers
American Association of Urban Universities
American Council on Education
Association of American Colleges
Association of College Admissions Counselors
Association of Governing Boards of Universities and Colleges
Catholic Educational Association of Pennsylvania
Commission for Independent Colleges and Universities
National Association of Student Personnel Administrators
National Catholic Educational Association
National Commission on Accrediting
Pittsburgh Council on Higher Education

COLLEGE OF LIBERAL ARTS AND SCIENCES

Accreditation

American Chemical Society

SCHOOL OF BUSINESS AND ADMINISTRATION

Accreditation

American Assembly of Collegiate Schools of Business

Membership

Association for University Business and Economic Research
Middle Atlantic Association of Colleges of Business Administration

SCHOOL OF EDUCATION

Accreditation

National Council for Accreditation of Teacher Education

Approved Program Approach of the Pennsylvania Department of Education*Membership*

American Association of Colleges of Teacher Education
Association of Higher Education
Association for Supervision and Curriculum Development
Council on Exceptional Children
National Association of Elementary School Principals
National Association of Secondary School Principals
National Education Association
National Society for the Study of Education
National Society of College Teachers of Education
Pennsylvania Association for Teacher Education
Pennsylvania Association of Colleges for Teacher Education
Pennsylvania Association for Retarded Children
Pennsylvania State Education Association

SCHOOL OF MUSIC*Accreditation*

National Association of Schools of Music
National Council for Accreditation of Teacher Education
National Association of Music Therapists
Pennsylvania State Council on Education

Membership

Association of American Choruses
Friends of the Music Library
National Association of Schools of Music
National Catholic Music Educators Association

SCHOOL OF NURSING*Accreditation*

National League for Nursing
Pennsylvania State Board of Nurse Examiners

Membership

National League for Nursing (Council of Baccalaureate and Higher Degree Programs)

SCHOOL OF PHARMACY*Accreditation*

American Council on Pharmaceutical Education
Pennsylvania State Board of Pharmacy

Membership

American Association of Colleges of Pharmacy

EVENING STUDY

The School of Business and Administration and the College of Liberal Arts and Sciences offer evening classes for full-time and part-time students each semester

and during the Summer Session. These are for persons whose employment does not permit them to attend as regular day students.

Through careful planning and consultation with academic advisors the bachelor's degree program may be completed by evening study in some major areas offered by these two schools. Other undergraduate schools also schedule occasional evening courses but it is not possible to complete their degree requirements through evening attendance alone.

Prospective evening undergraduate students should consult with the office of the Dean of the school in which they are interested for information about the opportunity for evening study on a continuing basis.

SUMMER SESSIONS

Many undergraduate and graduate courses are offered each summer in most areas. They are open to qualified Duquesne students and to those from other colleges and universities.

The sessions, of varying length, begin in mid-June and run through July. Short term offerings of one and two week duration, usually at the graduate level, are scheduled before and after the regular session.

Admission

OFFICE

The Office of Admissions is located on the first floor of the Administration Building.

Telephone: (412) 434-6220, 434-6221, 434-6222

Office hours: Monday through Friday from 8:30 A.M. to 4:30 P.M. and on Saturday from 9:00 A.M. to 12:00 NOON.

POLICY

It is the policy of Duquesne University to admit applicants who are best qualified to profit from opportunities which the University offers for intellectual, spiritual, and social growth. In general, admission is based upon past academic performance, scholastic ability, and personal characteristics. Information about religious preference, sex, racial characteristics, and ethnic origin is not taken into consideration by the Committee on Admissions.

ENTRANCE REQUIREMENTS

1. A candidate must have been graduated from an approved secondary school in the upper three-fifths of the class, and must have demonstrated exemplary personal conduct in that institution. Applicants who have not completed four years of high school must submit a High School Equivalent Diploma issued by their state department of education.

2. High school curriculum must include 16 units distributed as follows: four units in English; eight units in any combination from the areas of social studies, language, mathematics, and science; and four elective units for which the secondary school offers credit toward graduation. In specific instances, and at the discretion of the Committee on Admissions, the genuine equivalent of these requirements may be accepted in lieu of the precise requirements specified. (Note: Candidates planning to enroll in Pharmacy, Pre-Dental, or Pre-Medical programs, Medical Technology, Radiological Health, or as science or mathematics majors should have completed a minimum of seven units in mathematics and sciences.)

3. Scores in accordance with the standards adhered to by the University must be presented for the required College Entrance Examination Board Scholastic Aptitude Test (SAT) or The American College Testing Program (ACT). (Note: For admission to the School of Music, an audition is required.)

ROLLING ADMISSION

According to the Rolling Admission Plan, as soon as an applicant's credentials are received, they are evaluated and notification of the decision of the Committee is sent to the applicant. Duquesne University subscribes to this plan. Generally, a student will be notified upon receipt of senior SAT or ACT scores and the first marking period grades for the senior year.

APPLICATION—NEW FIRST-YEAR STUDENTS

Application should be addressed to the Director of Admissions, Duquesne University, Pittsburgh, Pennsylvania 15219. It may be submitted at any time during the candidates's senior year up to July 1, with admittance to Duquesne University to be initiated in November of the candidate's senior year.

The application procedure is as follows:

1. Obtain, complete, and file the Application for Admission with the Office of Admissions.
2. Include the \$20 non-refundable application fee with the application form. No application will be processed for consideration by the Committee on Admissions unless accompanied by the required fee.
3. Request the secondary school principal or guidance counselor to submit a transcript of the candidate's academic record.
4. Complete the required SAT or ACT examination during the spring of junior year or fall of senior year. It is the personal responsibility of each candidate to have test scores forwarded to the University.
5. An interview is highly recommended for prospective students.
6. If accepted, submit non-refundable tuition deposit by May 1 of senior year.

It is the responsibility of the applicant to arrange to have all supporting credentials on file with the Office of Admissions and Financial Aid Office prior to the deadline dates.

EARLY ADMISSION

Although the University believes that most students profit from four year in the secondary school, the Early Admission Plan is open to outstanding students. This is a plan whereby unusually able and mature candidates who have completed less than four years of a secondary school program may apply for consideration to begin college after their junior year. The high school diploma is awarded following successful completion of their freshman year in college.

APPLICATION—OTHER CATEGORIES

It is the responsibility of persons who apply for evening study, or as foreign students, post-graduates, readmission students, transfers, temporary transfers, and veterans, or for the Summer Session from Duquesne or as temporary transfers from other institutions to arrange to have all supporting credentials on file with the Office of Admissions and the Financial Aid Office before deadline dates.

FOREIGN STUDENTS

Foreign students are expected to meet the requirements for admission from secon-

dary schools or from other colleges and universities as outlined below. In every instance, Duquesne must receive complete and official transcripts of all degrees, diplomas, marks sheets, and examination records six months prior to the student's expected date of entrance. Records should be in original or notarized photostatic copies, accompanied by certified English translations.

1. *Academic*: The student must rank in the upper half of his secondary school graduating class and must present satisfactory scores from the SAT (Scholastic Aptitude Test).
2. *English Proficiency*: Students coming directly from foreign countries are required to take the TOEFL (Test of English as a Foreign Language)* in their country before a decision may be made on their admission to the University. Proficiency in English must be demonstrated in listening and reading comprehension and writing ability. Students who reside in this country at the time of application may be requested to take the TOEFL at the discretion of the Admissions Office.
3. *Financial Statement*: They must present documented evidence that they have in their possession adequate funds for study at Duquesne. The University does not have a program of undergraduate scholarship assistance for foreign students.
4. *Health Certificate*: Students for undergraduate admission must present evidence of good health in the form of a health certificate signed by a physician.

Upon completion of all academic and non-academic requirements, the Foreign Student Advisor will issue the necessary documents for obtaining a student visa to the United States. To complete on-campus registration, foreign students who are admitted should plan to arrive one week before the term begins.

POST-GRADUATES

A Post-graduate student must submit a Post-graduate application if the Bachelor's degree was received from an institution other than Duquesne. If the bachelor's degree was received from Duquesne an application for re-admission must be submitted. In both instances, proof of degree is required either by an official transcript or a certificate of graduation.

READMISSION

Any student who withdraws from the University must apply for readmission through the Office of Admissions regardless of the time interval involved since withdrawal. A student who is dismissed for academic reasons must appeal to the Committee on Student Standing of the school to which application for admission or readmission is being made.

TRANSFERS

A student who wishes to transfer from another college or university must have the complete transcripts of high school and college records forwarded to the Office of

*For information about testing in any country, the Educational Testing Service, Princeton, New Jersey 08540, should be contacted.

Admissions and must submit an application for admission. When accepted, the student must supply to the dean of his school a description of the courses which appear on the transcript. The student should contact the Advisement Office of his school for placement and curriculum planning following a reasonable period for evaluation of transcript.

The College of Liberal Arts and Sciences and Schools of Education and Pharmacy award 60 semester hours of credit to accepted transfer applicants who have an Associate Degree in Arts from a regionally accredited two-year institution.

Students transferring from a regionally accredited institution must present academic records which show an overall average of a C (2.0 on a 4.0 quality point system).

Persons seeking admission to the University as transfer students from a state approved college which does not have regional accreditation must have attained a cumulative average of 3.0 based on a 4.0 quality point system. In addition, such prospective students must take the College Entrance Examination Board tests and attain the appropriate scores.

An interview is required of all transfer students.

TEMPORARY TRANSFERS

No Temporary Transfer Student will be granted admission without formal application and a completed Temporary Transfer form from authorized personnel. Exceptions can be made if an official transcript is received in lieu of a Temporary Transfer form. In this case acceptance is provisional.

No Temporary Transfer shall be permitted to register for more than two semesters without making arrangements to become a permanent transfer.

An interview is required of Temporary Transfer applicants before attendance for their third semester.

VETERANS

All veterans with a high school diploma or its equivalent, who have not been dismissed from a college after serving active duty, would be eligible to enroll in Duquesne for one semester. Veterans who have no previous college work and have never taken the CEEB SAT must submit such scores before completing the first semester of attendance at the University; they must maintain a C average (2.0) or above in the first semester to continue in good academic standing at the University. A veteran should take his discharge papers to the appropriate officer in the ROTC for credit evaluation.

SUMMER SESSION

Any Duquesne University undergraduate student who was granted continuance at the close of the preceding Spring Semester is authorized to register in the Summer Session. Students who were dismissed by their school at the close of the preceding Spring Semester for academic reasons may register for summer classes by permission of the Committee on Student Standing of their school. All students must have their course selections approved by their academic advisor.

Graduates and other former students, including any who withdrew from the University, must obtain readmittance before they may register for summer classes.

TEMPORARY TRANSFERS—SUMMER

A student of another college or university who wishes to enroll for the summer session, and who intends thereafter to return to the original institution and is eligible to continue there may be admitted to the Summer Sessions as a Temporary Transfer Student.

A tear-out admissions application and registration form for summer study by a temporary transfer student, provided in the announcement of summer offerings, may be obtained from the Office of Admissions at mid-March.

ADVANCED PLACEMENT

Students who have followed the College Entrance Examination Board college level program in secondary schools and have performed satisfactorily in the advanced placement examinations are eligible for advanced placement. Duquesne University grants credit, as well as placement, for achievement that merits such consideration. Subjects included in the program are: English composition, history, history of art, languages, Latin, mathematics AB, mathematics BC, physics, chemistry, biology.

Credit will be given on a minimum advanced placement score determined yearly by the College of Liberal Arts and Sciences. For current information about the minimal score acceptable for each subject and the credits granted, consult with the University's Director of Testing or the Office of Academic Advisement, College of Liberal Arts and Sciences.

Applicants who hope to receive advanced placement credits must request that scores be sent to the University.

COLLEGE LEVEL EXAMINATION PROGRAM

The specific examinations for which the College of Liberal Arts and Sciences will award credit, with acceptable scores, are:

1. *General Examinations:* Humanities, social sciences.
2. *Subject Examinations:* American government, American history, analysis and interpretation of literature, biology, college algebra, college algebra-trigonometry, educational psychology, English composition, general chemistry, general psychology, geology, introductory calculus, introductory sociology, microbiology, micro-economics, macro-economics, statistics, western civilization.

A student who has accumulated 30 or more credits is not eligible to take the General Examinations for credit. The University is continuing to evaluate CLEP subject scores and performance at Duquesne. Credit will be given on a minimum score determined yearly by the College of Liberal Arts and Sciences.

Information about the time and place that examinations are given may be obtained from the University Testing Bureau or the College Level Examination Program, Box 977, Princeton, New Jersey 08540.

CREDIT HOUR BANK

The Credit Hour Bank is designed for high school students and adults who would like to sample college courses prior to official enrollment. The maximum number of

credits that may be taken is 15. Credits completed in the Credit Hour Bank are held in escrow until the applicant applies and fulfills all regular admission requirements. Upon regular admittance, all credits are then evaluated toward a degree program.

To apply to the Credit Hour Bank Program, write Credit Hour Bank across the top of an application, submit the \$20 non-refundable application fee, and attach a letter indicating full comprehension and acceptance of the conditions of the Credit Hour Bank Program.

Generally, all first year courses in the College of Liberal Arts and Sciences are open to Credit Hour Bank students.

Expenses

FEES AND TUITION

The University reserves the right to modify these charges if exigencies require such action. All charges are for one semester only; for yearly total, double amounts where applicable.

Application Fee (non-refundable)	\$ 20.00
Matriculation Deposit (non-refundable)	\$100.00
Residence Hall Pre-Payment (non-refundable)	\$100.00
Residence Hall Damage Deposit	\$ 50.00

SEMESTER TUITION AND FEE CHARGES

Auditors pay the same as those taking credit. The University reserves the right to change the tuition and fee charges herein at any time.

Undergraduate Tuition	for each semester hour credit	\$ 86.00
Graduate Tuition	for each semester hour credit	\$ 91.00
*University Fee	12 or more credits.....	\$125.00
	9 to 11 credits.....	\$ 88.00
	5 to 8 credits.....	\$ 62.00
	1 to 4 credits.....	\$ 33.00
*Undergraduate Music Student Fee when carrying 12 or more credits..		\$100.00
*Undergraduate Business and Administration Student Fee		
	12 or more credits.....	\$ 5.00
	less than 12 credits.....	\$ 3.00
*Undergraduate Pharmacy Student Activities Fee		\$ 25.00
(Third, Fourth, and Fifth Year Students)		
Late Registration		\$ 10.00
Removal of I Grade Fee		\$ 5.00
Change of Schedule Fee	for processing each form	\$ 5.00
Credit by Examination	for each course credit hour	\$ 10.00

LABORATORY FEES

All figures are for one semester only; for yearly total, double amounts where applicable.

*Charged on each semester registration.

Anatomy and Physiology 209, 210	\$ 25.00
Chemistry Laboratory	\$ 25.00
Biology Laboratory	\$ 25.00
Physics Laboratory	\$ 15.00
Earth Science Laboratory 103, 104	\$ 15.00
(One \$5.00 breakage card a semester will cover all laboratory courses in Anatomy, Chemistry, Biology and Physics.)	
Psychology 356	\$ 7.00
Journalism 267, 268, 367, 369, 375, 405, 409	\$ 10.00
Journalism 370, 378, 413	\$ 15.00
ROTC Leadership Laboratory	\$ 5.00
School of Pharmacy Laboratories (each)	\$ 30.00

SUMMER AND SPECIAL SESSION TUITION AND FEE CHARGES

Undergraduate Tuition	for each semester hour credit	\$ 86.00
Graduate Tuition	for each semester hour credit	\$ 91.00
University Fee	1 to 4 credits.....	\$ 33.00
	5 to 8 credits.....	\$ 62.00
	9 to 11 credits.....	\$ 88.00
	12 or more credits.....	\$125.00

GRADUATION FEES

Bachelor Degree	\$ 30.00
Master Degree	\$ 40.00
Doctor of Pharmacy Degree	\$ 40.00
Juris Doctor Degree	\$ 40.00
Doctor of Philosophy Degree	\$ 55.00
Thesis Binding Fee—Doctoral Dissertation	\$ 40.00
Thesis Binding Fee Master Thesis	\$ 25.00

WITHDRAWAL AND TERMINATION OF ATTENDANCE

Upon officially withdrawing from the University, a student receives remission of part of the tuition charged for the semester or session in accordance with the Tuition Remission Schedule. The amount of the remission is added to payments, and a cash refund is made where a credit balance is created on the student's total account.

The Effective Date of Withdrawal for determining the percent of remission is that on which the appropriate Academic Dean was notified by letter of the student's decision to terminate attendance and requested official withdrawal. It is also the recorded date of the student's separation from the University and regarded as the last day of attendance. A student is considered enrolled and "in attendance" until he or she acts to terminate attendance in conformity with this policy even though absences from classes were observed and recorded before the Effective Date of Withdrawal.

Any remission of tuition beyond the limits of the prescribed withdrawal schedule is subject to approval of the University Vice President and Treasurer. However, when a student's attendance is involuntarily terminated because of personal dis-

ability arising from injury or illness, the appropriate Academic Dean may establish the last day of attendance as the Effective Date of Withdrawal.

TUITION REMISSION SCHEDULE

This schedule applies to tuition only; it does not apply to other charges, such as the University Fee, course fee, and laboratory fees, nor to the reduction of credits resulting from course withdrawals made after the Change of Schedule period:

<i>Within the Semester</i>	<i>Percent of Remission</i>
First Week	80
Second Week	80
Third Week	40
Fourth Week	20
After Fourth Week	None
<i>Within the Summer Session</i>	
First Week	60
Second Week	20
After Second Week	None

ROOM AND BOARD

The request for on-campus residence is made on the same form used for application for admission to the University. After the student has completed the admission procedure and has paid the matriculation deposit, the residency request is referred automatically to the Director of Residence Life. The request is processed and necessary application forms are forwarded to the student.

The University requires that a prepayment of \$100, which is applicable to the following semester's room and board account, accompany all applications for room reservations or renewals. This pre-payment is non-refundable.

In addition, a \$50 damage deposit must accompany each initial housing contract. This deposit is retained by the University throughout the period of residency. If no damage deductions are incurred and the room key and ID card returned, the full amount of the deposit is refunded at the final termination of residency.

Reservations are made on a semester basis—August to December, January to May. Rooms may be occupied no earlier than noon of the day preceding the beginning of the orientation or registration periods.

All students occupying rooms in the University residence halls are required to take their meals at the Resident Dining Hall. Charges are for 20 meals a week, with meals served commencing with the evening meal of the day before the first day of classes.

All resident students must present evidence of health and accident insurance coverage; such coverage is available through the University.

The University reserves the right to modify these charges if exigencies require such action.

Regular Session—Room and Board (20 meals a week)	
Single for each semester	\$907.50
Double for each semester	\$702.50

Summer Sessions—Room and Board***Eight Weeks:**

Single \$388.00

Double \$344.00

Six Weeks:

Single \$291.00

Double \$258.00

Workshops (a week)

Single \$ 48.50

Double \$ 43.00

ROOM AND BOARD REFUND

No refund of room charges will be made where withdrawal occurs after the opening of class.

In the event of withdrawal, board will be refunded at the rate of 75 percent of the balance left on the student's meal plan up until mid-semester. After the mid-semester point, no refund will be made.

PAYMENTS AND OTHER CREDITS**DEFERRED PAYMENT**

All charges for tuition, fees, room, and board, less financial assistance authorized by the Financial Aid Office, are payable at registration.

STUDENT FINANCING PROGRAM

The University provides a deferred plan for the payment of tuition and fees; to qualify for the plan all charges for previous semesters must be paid in full. The program provides financing up to 50 percent of the total current semester charges, less financial aid and other prepayments, to be repaid in two equal installments with interest on the unpaid balance of 15 percent a year.

A late charge of \$10 a month plus interest at the rate of 15 percent a year will be assessed for any amount which is not paid when due.

BANK CREDIT CARDS

BankAmericard and Master Charge are accepted for payment of tuition, fees, room and board.

CASHING CHECKS

A student may cash a check up to a maximum of \$50 at the Cashier's Office between 9:00 A.M. and 4:00 P.M., Monday through Friday, except during registration, with a validated ID Card.

BAD CHECKS

It is the policy of the University to charge bad checks to the student who cashes them regardless of the maker. A \$3.00 service charge will be assessed on checks that

*Those desiring residency for the Summer Sessions should make reservations with the Director of Residence Life no later than May 31. A deposit of \$20 must accompany each application. After occupancy, the deposit is applied toward the room and board expenses. This deposit is not refunded if the room is not occupied.

are returned from a bank for lack of funds. In addition, monthly bills will reflect a \$10 penalty plus 15 percent a year on the balance due.

SCHOLARSHIPS

A student may have a scholarship to credit towards his or her tuition and fees. This scholarship will only be honored by the cashier when it is presented on a Scholarship Voucher prepared by the Scholarship and Financial Assistance Office.

Financial Aid

Duquesne University subscribes to the philosophy that “no student should be denied the education of his choice for lack of sufficient financial resources.” The Office of Student Financial Aid has been established to help students locate the financial support they require. Students and parents should not be overwhelmed by the variety and apparent complexities of modern student financial aid. Rather, a patient and thorough examination of aid opportunities should be undertaken to locate the most advantageous forms of assistance available to the individual student.

PRINCIPLES OF AID

FINANCIAL NEED

The major criterion of most aid programs is the student’s need for funds. Parents and the student are expected to pay the expenses of education. However, to the extent they cannot reasonably be expected to meet this expense, there is a *demonstrated financial need* or eligibility for aid. Methods of determining need may vary slightly among aid sources, but all have the common objective of identifying the difference between educational costs and the individual family’s ability to contribute to these costs. The costs considered include tuition, fees, room and board or an allowance for maintenance at home, travel or commuting expenses, books, and necessary personal expenditures. Need analysis presumes the family’s ability to contribute to these costs will approximate that of families of similar size and financial strength, with consideration given for individual circumstances. Where need is a factor, it is extremely important all financial information reported by the family be *complete, accurate, and updated* for any major changes. Such information is considered and treated confidentially by aid administrators.

AWARD CONDITIONS

All financial aid awards are subject to terms and conditions set forth in applications and award notifications. It is important that the student carefully read all information provided by aid sources and promptly notify them of changes pertinent to their applications or awards.

STUDENT SELF-HELP

As the beneficiary of higher education, the student is expected to accept at least partial financial responsibility for the cost. This principle is reflected in both the determination of need and the types of aid available. In determining need, consideration is given for at least a minimum contribution to cost from the student’s summer ear-

nings, savings, and benefits such as social security. Two types of self-help programs of aid are available: loans and work. Student loans provide rates, terms, and conditions far superior to those offered by commercial lenders, and offer the student the opportunity to help himself by accepting future repayment responsibility. Student employment programs provide the opportunity to help earn a portion of the educational costs.

GIFT ASSISTANCE

Non-repayable scholarships or grants are available in accordance with one or a combination of the following criteria: 1) *Financial Need*; 2) *Superior Academic Potential or Achievement*; 3) *Economic Opportunity*, which aims to provide economic parity for the student with very limited family resources, and whose need is therefore exceptional; and 4) *Service Recognition*, which reflects proficiency in a specialized field such as music, or for future service such as an officer in the Armed Forces. It should be noted that many sources of gift aid expect the student to accept some form of self-help assistance.

MEETING STUDENT NEED

The Financial Aid Office *attempts* to provide aid equal to need for all student applicants. Frequently, this requires an "aid package" consisting of funds from multiple aid sources and programs. Those programs which are under the direct control of the Aid Office are not usually sufficient to meet full need or provide an aid package of the most beneficial composition. It is advisable and expected that students who apply for assistance to the University will also apply to federal, state, and other available sources.

PROGRAM FUNDING

All programs of financial aid are subject to limitations of available funds. Therefore, in addition to the eligibility requirements of a particular program, assistance depends upon the level of funding in the program. First consideration always goes to applicants who apply within deadline dates and who provide *complete and accurate* information. All programs are subject to change, elimination, or replacement. Changes in government programs are routine, since these require periodic legislative review.

CURRENT INFORMATION

Because programs of aid and conditions of eligibility do change from time to time, the student should attempt to keep abreast of new developments. The high school guidance office, the University Financial Aid Office, and the office of education in the student's home state are excellent sources of information. Students should avoid the error of disqualifying themselves for specific forms of aid because of hearsay or dated information. A decision not to apply to a particular aid source should be made only upon the advice of an aid officer.

SOURCES OF AID

ONE: Financial Aid Office

APPLICATION—UNIVERSITY AID

1. Applicants must be currently enrolled in the University or be in the process of applying for admission. Incoming students should not wait for official acceptance to the University before applying for financial assistance.
2. Obtain the formal application for financial assistance. (Freshmen and transfer students may obtain the form through Admissions Office publications or through the Financial Aid Office. Currently enrolled students may obtain the form only through the Financial Aid Office.) Complete this application and submit it to the Financial Aid Office, Duquesne University, Pittsburgh, Pennsylvania 15219 *PRIOR* to these deadline dates: For the Fall Semester or the academic year, no later than May 1; for the Spring Semester, no later than December 1. Late applicants will be considered on the basis of available funds.
3. Obtain from the high school guidance office or the Financial Aid Office a Parent's Confidential Statement. Complete and submit it according to instructions to the College Scholarship Service. Statements take four to eight weeks to process and therefore should be submitted as early as possible.
4. Reply to this application, if filed by deadline dates, should be anticipated as follows: Freshmen and new transfers: 60 days after PCS filing date, between mid-February and late March (providing student has been accepted for admission). Upperclassmen and graduate students: Replies should be anticipated in June or July.
5. Applications must be renewed annually.

PROGRAMS

The following programs for which the foregoing application procedures apply, are administered directly by the Financial Aid Office.

University Scholars Awards. The University awards approximately 15 scholarships annually to exceptional high school scholars. These awards are not based on a demonstrated need and may be renewed each year provided the student maintains a high level of academic achievement. Renewal amounts may vary relative to the degree of achievement.

Competitive Scholarships. These awards are given to students of outstanding ability and achievement who also demonstrate financial need. They are renewable yearly based on continued academic achievement, and continued demonstrated need. Continued academic achievement is normally reflected by a cumulative Quality Point Average of 3.0 or above. Renewal amounts may vary relative to the degree of achievement and level of need.

National Direct Student Loans. National Direct Loans are available to both full-time and half-time students who demonstrate financial need and are making acceptable progress toward a degree. Recipients are selected in accordance with guidelines published by the U.S. Office of Education. Loan repayment does not begin until nine months after the borrower terminates at least half-time study, and is scheduled over a ten year period at a three percent interest rate.

Nurses Training Act Loans. Nurses Training Act Loans are available to both full-time and half-time nursing students who demonstrate financial need and are making acceptable progress toward a degree. Recipients are selected in accordance with guidelines published by the Federal government. Loan repayment does not begin until nine months after the borrower terminates at least half-time study in nursing, and is scheduled over a ten-year period at a three percent interest rate.

Health Professions Loans. Health Profession Student Loans are available to full-time undergraduate students in the Bachelor of Science in Pharmacy program who demonstrate financial need and are making acceptable progress toward a degree. Recipients are selected in accordance with guidelines published by the Federal government. Loan repayment does not begin until one year after the student ceases to pursue a full-time course of study in pharmacy.

Supplemental Educational Opportunity Grants. Federal grant assistance is available to full or half-time students with *exceptional financial need*. Recipients are selected in accordance with guidelines published by the U.S. Office of Education.

Nursing Scholarships. Scholarship assistance is available to full or half-time undergraduate nursing students with *exceptional financial need*. Recipients are selected in accordance with guidelines published by the Federal government.

Health Profession Scholarships. Scholarship assistance is available to full-time undergraduate students with *exceptional financial need* who are enrolled in the Bachelor of Science in Pharmacy curriculum. Recipients are selected in accordance with guidelines published by the Federal government.

Repayment of Educational Indebtedness. Upon completion of professional training, nurses may enter an agreement with the Secretary of Health Education and Welfare to practice the profession of nursing in an area determined to have a shortage of nurses. Minimum agreement is for two years, with a third year optional. In return for such service, the federal government will repay 60 percent of all bona fide educational indebtedness. For three year service, 85 percent of indebtedness will be repaid.

Student Employment. Two programs of employment are available to financial aid applicants who demonstrate need. The first is the College Work-Study Program which is financed principally by Federal appropriations and awarded as aid in accordance with guidelines published by the U.S. Office of Education. The second program is referred to as the General Program which is funded by the University. In addition to considerations of financial aid, placement in a part-time position depends upon the student's qualifications for performing successfully in the job. Student employment is limited to a maximum of fifteen working hours a week when classes are in session. Students working under either program may not retain outside jobs during academic periods.

TWO: Basic Educational Opportunity Grants

Direct grant assistance through the Federal government is available to undergraduates based on an eligibility determination reviewed and adjusted each year by Congress. Grants range from a minimum of approximately \$200 to a maximum of \$1400 to students determined to be eligible. Applications may be obtained from high school guidance offices, college aid offices, or branches of the United States Post Office.

THREE: State Grant Assistance

General. Depending upon the student's legal state of residence, direct grant assistance from the state may be available for study at Duquesne University. Non-Pennsylvanians should contact their high school guidance counselor or state department of education to determine if grants are available, and to determine application procedures.

Pennsylvania State Grants. At current levels, grants ranging from \$100 to \$1200 a year are available to full-time undergraduate students, based on considerations of financial need. Applications may be obtained from high school guidance offices or from the Pennsylvania Higher Education Assistance Agency (PHEAA) in Harrisburg. Deadline is normally May 1.

FOUR: Guaranty Student Loans

This program provides long-term, low interest student loans available through the cooperative efforts of Federal and state governments and participating private lending institutions. Depending upon the policy of particular states and lenders, loans to a maximum of \$1500 or \$2500 a year are available for undergraduate study. Loan repayment does not begin until nine months after the borrower terminates his course of study and may be scheduled for a period up to ten years, at a seven percent interest rate. Applications and information are available from participating lenders, which include banks, savings and loan associations, credit unions, and similar financial institutions. A 90-day processing period should be anticipated. Guaranty Loans are generally considered an alternate or supplemental source of assistance to all other forms of aid. Students who apply for or receive aid through the Financial Aid Office should apply for a Guaranty Loan only after consulting with an Aid Officer.

FIVE: Other Scholarships and Loans

In addition to mass programs of aid previously described, financial assistance may be obtained from a wide variety of sources. Since these tend to be *exclusive*, it is not possible to provide specific information. In general the student seeking potential sources of aid may inquire of: 1) high school guidance officers; 2) library publications such as: *Guide to Financial Aid for Students and Parents*, published by Simon & Schuster; 3) parents' employers or labor unions; 4) fraternal, social, religious, or professional organizations; 5) major organizations utilizing the skills of the field for which the student is preparing; and 6) specific departments within the University (listing follows).

AID FROM DEPARTMENTS AND SCHOOLS

COLLEGE OF LIBERAL ARTS AND SCIENCES

Carroll Scholarship in Creative Writing. Established in memory of Monsignor Walter T. Carroll and in tribute to Bishops Coleman F. and Howard J. Carroll, the purpose of this scholarship is to provide some deserving student, who has already expressed talent in writing, with sufficient financial aid (the exact sum to be determined by the committee) so that in his Senior year he may devote the time necessary to develop these talents. The award is administered by the Carroll Scholarship Committee of the English Department. Interested students should contact the committee before January 15 of their junior year.

Pittsburgh Communications Foundation Loans. The Foundation has established a \$3000 loan fund for deserving junior and senior full-time students in the Department of Journalism. Students will be required to repay the loan within two years after graduation at three percent a year. Such loans will be granted on the recommendation of the Chairman of the Journalism Department assisted by the Journalism faculty. Loan inquiries and applications should be made to the Chairman of the Department of Journalism.

The Eleanor Polis Capone Memorial Award. The award honors, in perpetuity, the memory of Eleanor P. Capone. The scholarship consists of the total annual income from a restricted growth endowment fund and is awarded to an undergraduate student enrolled at the University, who will be selected on the basis of merit in the field of creative writing with need a secondary consideration. Interested students should contact the Chairman, Honors and Awards Committee, English Department, prior to January 15.

The Rev. Joseph A. Lauritis, C.S.Sp., Journalism Scholarship. This is an annual scholarship in tribute to the Rev. Joseph A. Lauritis, C.S.Sp., founder of the Department of Journalism and the University's radio station, WDUQ-FM, for an entering freshman at Duquesne University, planning to major in journalism. The award is administered by the Lauritis Scholarship Committee of Journalism faculty, alumni, and friends.

SCHOOL OF BUSINESS AND ADMINISTRATION

Gulf Oil Corporation Honors Scholarships. This program provides grants of up to \$1500 a year to outstanding undergraduate students in the field which may eventually qualify them for employment in the business world and, more particularly, in petroleum and related industries. Normally, one scholarship is provided for each class, freshman through senior.

Law Enforcement Assistance Programs (LEEP). Programs of grants and loans for students of criminal justice are administered by the Law Enforcement Assistance Administration. Preference is given the student who is currently a law enforcement officer pursuing a degree in law administration.

SCHOOL OF EDUCATION

Helen S. Platt Memorial Scholarship. The Children's Aid Society of Jewish Women of Pittsburgh, Pennsylvania will award a financial scholarship for a student majoring in Special Education who is in need of financial aid. The student must also have sound academic credentials and a commitment to a career in Special Education.

Lawrence Roche Memorial Scholarship. The award will be made to a student who, as a junior in the School of Education, has in the judgment of the Awards Committee, demonstrated those qualities of scholarship, character, and professionalism which merit special recognition. The awardee must have a minimum quality point average of 3.0 at the time of application. The student must be officially registered as a senior in the School of Education of the University at the time of receiving the award. Applications must be submitted to the Dean's office no later than March 1.

SCHOOL OF MUSIC

Women's Advisory Board Scholarships. This fund provides scholarships in varying amounts each year to vocal performers. These scholarships are available to entering freshmen and upperclassmen.

George Barrere Memorial Scholarship. The Pittsburgh Flute Club offers a scholarship in flute in memory of George Barrere, founder of the first flute club in the United States. This \$300 scholarship is awarded to a freshman or a sophomore flute major.

Polish Arts League Scholarship. This award is made annually by the Polish Arts League of Pittsburgh to an outstanding performer in the School of Music. Preference will be given to a student of Polish ancestry. Other students will not be excluded from consideration.

Music School Scholarships. These awards are made possible by donations from individuals and organizations in appreciation of performances by School of Music students.

University Solo Wind Scholarships. These scholarships in varying amounts are awarded only to potential "First chair" performers.

University String Scholarships. These scholarships tuition and applied music fees have been established by the University to promote the study of string instruments.

Pittsburgh Flute Club Award. This award is given to an outstanding woodwind student.

University Piano Scholarships. These scholarships are awarded to students showing outstanding talent in piano.

Ezio Pinza Memorial Scholarship. This award is presented to an outstanding vocal student, male or female, between the ages of 17 and 25 who has not completed an undergraduate degree.

SCHOOL OF NURSING

Professional Nurse Traineeship Program. The United States Public Health Service provides a limited number of traineeships for qualified registered nurse students who can complete the requirements for the baccalaureate degree within one year; who have been recently employed as nursing administrator, supervisor (including head nurse), or teacher; and who can qualify for admission to graduate study.

Other Programs. Two additional programs, Nurses Training Act Loans and Nursing Scholarships, are described under Sources of Aid—Financial Aid Office, page 21.

SCHOOL OF PHARMACY

American Foundation for Pharmaceutical Education. The Foundation annually allocates funds to accredited colleges of pharmacy. The college must provide a sum equal to that requested from the Foundation. Recipients, designated as Scholars of the American Foundation for Pharmaceutical Education, are selected from fourth and fifth year students.

Women of Galen. The Women's Auxiliary of the Galen Pharmaceutical Society of Pittsburgh annually provides scholarship funds to be awarded to deserving pharmacy students in their last years of attendance in the School of Pharmacy.

American Pharmaceutical Association Women's Auxiliary Loan Fund. This loan fund was established to support worthy women students in accredited colleges of pharmacy during the last two years of their attendance prior to graduation.

Beaver County Pharmaceutical Association Loan Fund. This revolving loan fund provides financial assistance to students in the School of Pharmacy who are residents of Beaver County, Pennsylvania. Applications are to be made to the Dean of the School of Pharmacy.

Samuel W. Curtis Loan Fund. This fund is intended to provide financial assistance for students in the School of Pharmacy.

Joel P. Laughlin Scholarship. In the honor of Joel P. Laughlin, a fraternity brother whose life was terminated early in his professional program, the Graduate Chapter of Phi Delta Chi annually awards three \$200 scholarships to one fraternity brother in each of the three professional years. The recipients must have demonstrated academic achievement and active participation in the functions of the Fraternity.

Peter and Dorothy Manzione Memorial Fund. A revolving loan fund, donated by Rosetta and Geraldine Manzione and friends of the family, is available to all students in the School of Pharmacy.

Mary McPartland Beck Scholarship Award. Scholarship funds are available from earnings on a fund begun by a bequest to the School of Pharmacy in 1970.

John W. Dargavel Foundation. Established by the National Association of Retail

Druggists in honor of its executive secretary, John W. Dargavel, this foundation provides a \$200 scholarship to a qualified student in the School of Pharmacy as well as loans to students of pharmacy in their last three years for payment of tuition, fees, and books.

Galen Pharmaceutical Society Loan Fund. This revolving fund was established in 1963 for the purpose of providing financial assistance to worthy students of Pharmacy during times of urgent financial distress.

Fred Schiller Loan Fund. This loan fund was founded by Mr. Fred Schiller, Pittsburgh pharmacist, in memory of the late Emanuel Spector, for worthy and qualified students in the School of Pharmacy. This revolving fund makes available tuition loans of varying amounts depending on the applicant's need and general ability.

John Clothier Sims Memorial Fund. This revolving fund, established in 1954, was made possible through the generosity of the friends of the late Mr. Sims, executive of Sun Drug Company, Pittsburgh. Partial tuition loans are made available to students under the conditions that apply to the Fred Schiller Loan Fund.

Pittsburgh Graduate Chapter of Kappa Psi Pharmaceutical Fraternity. Maintains a revolving loan fund for members of the undergraduate chapters. Details are available from the School of Pharmacy.

Rite-Aid Scholarship. A \$1,000 scholarship from the Rite-Aid Corporation is available to students entering the final year of the pharmacy program. Letters of application should be addressed to the Dean, School of Pharmacy, by May 1. Selection is based on financial need, demonstration of normal progress, and good standing in the pharmacy program.

Tau Alumni Chapter of Lambda Kappa Sigma. This professional pharmacy fraternity for women has established financial awards for members in their last three years of the pharmacy program. Awards are based on financial need and participation in the organization.

Other Programs. Two additional programs, Health Professions Loans and Health Professions Scholarships, are described under Sources of Aid—Financial Aid Office, page 21.

RESERVE OFFICER TRAINING (ROTC) SCHOLARSHIPS

Army ROTC offers a number of scholarships for cadets enrolled in both the four-year and two-year programs. These scholarships provide for tuition, fees, required textbooks, and \$100 a month subsistence allowance. Interested high school students who feel they can meet the competitive standards for the scholarships may apply by writing to: Army ROTC, Duquesne University, Pittsburgh, Pa. 15219. The application and processing period begins in June of the year in which the stu-

dent completes his junior year of high school. For cadets already enrolled at Duquesne University, scholarships are available during the sophomore, junior, and senior years. In order to continue to be eligible to receive financial assistance, each scholarship recipient must maintain the academic and personal standards on which original eligibility was based. *Interested high school seniors must apply prior to December 31 of their senior year.*

Registration

Students are expected to participate in pre-registration during which academic advisement is available. Pre-registration for the Fall Semester begins in April and continues through midsummer; for the Spring Semester, it is conducted during the fall.

Following pre-registration, a comprehensive invoice that confirms courses for which students registered and their class schedules is mailed to them a month in advance of the beginning of classes. It also gives a detailed listing of fees, tuition, housing charges, financial aid awards, and deposits, thus enabling students to pay their obligations by mail and assuring them of places in the courses for which they pre-registered.

Preceding the opening of classes, a three-day final registration is held for students who either did not pre-register or did not pay their charges by mail.

The financial obligation incurred by a student for class places obtained in pre-registration cannot be canceled unless written timely notification of the decision is given to the Dean of the appropriate school. Such notification must be received at the Office of the Dean on or before the final day of registration. Notification received on or after the opening day of classes is subject to the official withdrawal policy.

Summer orientation programs are conducted by the undergraduate schools in conjunction with academic advisement and pre-registration for new first-year and transfer students. Summer Session registration is held during the week before the beginning of classes for the session.

OFFICIAL REGISTRATION

Only students who are recognized as *officially registered* are bonafide students of Duquesne University. Unless students are officially registered, they are not permitted to attend classes, engage in student affairs, or, generally, have access to the buildings and grounds or use of the University's facilities.

Official registration is the recognition given by the University to persons who have met these conditions:

1. Appropriate authority for admittance to study in a school or department has been given by an authorized officer of the University. The admitting authority for undergraduate students resides in the Director of Admissions, and for graduate students, in the respective dean of the graduate school concerned.
2. Authorization to continue in the program selected has been given and registration for classes has been accomplished in compliance with all academic requirements and procedures.

3. Arrangements have been made to the satisfaction of the University for payment in full of all financial charges, including fees, tuition, and housing charges, all of which are due and payable in full before the beginning of classes.

CHANGE OF SCHEDULE

Students who require a change of their class schedules (dropping or adding a course) may make the adjustment during pre-registration or the change of schedule week at the start of a semester but not later than the Latest Date for Change of Schedule as announced in the Academic Calendar. All changes must be approved by the appropriate academic advisor and processed with the Registrar.

During the Change of Schedule week approval of the instructors whose classes are being added or dropped is also required. A fee of \$5.00 is charged for each form processed except when the change is by request of the appropriate Academic Dean.

No adjustment is made in the semester tuition charge for credits dropped when the change occurs later than the announced Latest Date for Change of Schedule. However, students who terminate their enrollment at the University *by officially withdrawing* are entitled to a reduction of the semester tuition charge according to the refund schedule published elsewhere in this catalog.

LATE REGISTRATION

With approval of the appropriate dean and upon payment of the penalty fee, late registration may be permitted for a serious reason; however, no student may be registered and begin attending classes later than the Latest Date for Change of Schedule as announced in the Academic Calendar.

CROSS-REGISTRATION

Cross-college and -university registration provide opportunities for enriched educational programs, approved by a student's advisor or Dean, for undergraduates at any of the following institutions:

Carlow College
Carnegie-Mellon University
Chatham College
Community College of
Allegheny County

La Roche College
Pittsburgh Theological Seminary
Point Park College
Robert Morris College
University of Pittsburgh

The opportunity for cross-registration will be available to each full-time student enrolled in any program leading to a bachelor's degree. Full credit and grade will be transferred.

Each college or university shall accept registration in freshman through senior level courses listed by them as open to cross-registration, selected from courses regularly accredited toward baccalaureate programs. First priority in registration shall go to the students of the host college.

The approval of the dean or advisor and registrar from each college or university must be obtained prior to registration. The student's advisor or Dean is responsible for assuring eligibility for the course in which the student intends to enroll. Each

qualified student may enroll in no more than one course off campus in any one term or semester under this program.

These policies on cross-registration are not effective at this time for enrollments in summer sessions, including the spring term at the University of Pittsburgh.

SEMESTER GRADE REPORTS

Every registered student who is free of financial obligations to the University is sent a report of grades to the permanent address on record soon after the close of each semester.

TRANSCRIPTS

Each student receives a summary transcript of his or her complete academic record at the close of each academic year. Students should carefully examine their record for accuracy and immediately report errors to the Registrar.

To obtain additional copies of their academic records students must write to the Registrar for transcripts for themselves or for other institutions and agencies. All *official* transcripts issued by the Office of the Registrar bear the signature of the Registrar and the embossed seal of the Office of the Registrar. Whenever an *official* transcript is released directly to the student it will also bear the stamped designation, *Issued to Student*.

No transcript will be issued unless all financial obligations owed by the student to the University have been fulfilled. A fee of \$1.00 is charged for the issuance of each transcript.

CONFIDENTIALITY OF STUDENT RECORDS

The University regards the student's personal information and academic record as a matter of confidence between the student and the University. The contents of either may be revealed only in accordance with the Family Educational Rights and Privacy Act of 1974 (Public Law 93-380, Section 438, as amended).

Scholastic Policies

ACADEMIC ADVISOR

Every student attending the University is assigned or selects an academic advisor. It is the student's responsibility to ascertain the advisor's name which may be obtained from the office of the school in which the student is enrolled.

The student should consult with the academic advisor about the program and any questions of an academic nature. No student may register without the academic advisor's approval and signature.

AUDITING COURSES

To audit courses, a student must be officially registered and pay the same charges as for courses that are taken for credit. Enrollment in a course for audit is subject to approval of the student's academic advisor; permission to audit graduate and professional courses requires consent of the Dean of the school in which the desired course is offered.

CANCELLATION OF COURSES

The University makes every reasonable effort to offer courses as announced in the Semester Schedule of Courses and the Summer Session Bulletin. It reserves the right, however, to make changes or cancel courses in the academic schedule because of insufficient enrollment or for any other equally valid reason.

CLASS ATTENDANCE

Regular class attendance is normally essential for maximum educational advantage and is strongly encouraged. The responsibility for all course material rests wholly with the student. Class attendance shall not be used as the basis for altering a grade in a course.

It is the prerogative of each school to establish policy for attendance at tests and examinations, deadlines for reports, and specific school or course requirements. It is the instructor's responsibility to make the school's policy known at the first class session as it pertains to the course.

Details about class attendance in schools that have specific policies will be found in the latter sections of this catalog.

CLASSIFICATION OF STUDENTS

Freshman: less than 30 credits completed.

Sophomore: 30 to 59 credits completed.

Junior: 60 to 89 credits completed.

Senior: 90 or more credits completed.

1. *Full-time Student.* A student with an academic schedule of at least 12 credits is considered a full-time student. With this status a student is entitled to the benefits of various activities. A student may not change status during the semester without the permission of the academic advisor and the Dean of the student's school.

2. *Part-time Student.* Anyone who carries under 12 credits is regarded as a part-time student.

3. *Post-graduate Student.* A person who has completed a baccalaureate degree and is seeking additional undergraduate credits.

COURSE EXAMINATIONS

Unit examinations are given on the dates announced at the beginning of each semester by the instructor. Grades for these are obtained from the instructor.

Final examinations are given at the end of each semester and summer session according to the Academic Calendar. Final grades are to be reported by the instructors to the registrar within 72 hours after the final examination. No student is excused from taking the final examination. The temporary grade I (Incomplete) may be given to a student who, due to extenuating circumstances, is absent from the scheduled final examination; however, determination of whether the student may legitimately receive an I grade must be made when the I grade is submitted.

CREDIT BY EXAMINATION

Courses in which a student feels he or she has sufficient competence, may be "challenged" by taking an examination for credit. If the examination is passed, the credits will count for graduation, but neither grade nor quality points will be assigned. A fee of \$10 a credit hour is charged.

GRADING SYSTEM

The officially recognized method of grading course work and rating academic performance of students at the University is as follows:

- A —Excellent
- B —Good
- C —Average
- D —Below average; passing
- P —Pass (Used in some courses where scaled grading is inappropriate. Indicates satisfactory completion of course work with credits earned but without quality points and is independent of the quality point system)
- S —Satisfactory (Used in pass/ fail courses and is independent of the quality point system)
- F —Failure (Course must be repeated for credit)
- U —Unsatisfactory—Failure (Used in pass/ fail courses and is independent of the quality point system; course must be repeated for credit)
- I —Incomplete (The temporary grade for undergraduate students. It indicates incomplete course work which if not completed by the date

specified in the Academic Calendar becomes a permanent F grade. The I grade may be given when a student has not completed the work of a semester because of some extenuating circumstance.)

X —Absent from Final Examination. This grade was superseded in September, 1974 for undergraduate course evaluation by the I grade.

WITHDRAWAL GRADES

These symbols are used on a student's permanent academic record to indicate termination of attendance in courses under conditions of official withdrawal: (See pages 36 and 37, Withdrawal from a Course and Withdrawal from the University).

W —Official Withdrawal

WP —Official Withdrawal and Passing

WF —Official Withdrawal and Failing

QUALITY POINT SYSTEM

The student's overall academic grade average (QPA) is obtained by dividing the total quality points earned by the total number of semester hours attempted. These quality point values of grades are used for each credit attempted:

A—four points

B—three points

C—two points

D—one point

F—zero points

Courses in which grades P, S, U, I, and W were given are not used in calculating the quality point average.

REPEATING COURSES AND COURSE RETROGRESSION

Ordinarily, with permission of their advisor, students may repeat courses in which grades of F and D were received. All grades are retained on the permanent academic record. The result of the final attempt in a repeated course is, however, the student's status in the course with regard to attempted credits, earned credits, and the completion of requirements.

Courses which must be taken in progression are those that have a required sequence, such as mathematics and modern languages. A student who has received an F for a prerequisite course may not continue in the sequential progression.

PASS/FAIL ELECTIVES

One course a semester, elected by a junior or senior and approved by the academic advisor as providing an opportunity to expand and enrich the student's experience, may be taken on a pass/fail (S-U) basis. If passed, the credits will count for graduation, but neither grade nor credits will be calculated in the quality point average.

Once a course has been identified as a pass/fail elective, the course must be completed as such, and the grade submitted must be an S or a U. No required course may be taken on a pass/fail basis. The decision to elect the pass/fail option must be made during registration or no later than the close of the period provided for making schedule changes.

STUDENT STANDING

Since progress toward a degree is measured by the cumulative quality point average, the scholastic records of students who fail to meet the minimum requirements will be submitted to the individual School's Committee on Student Standing for appropriate action.

Students who fail to meet the minimum requirements in the Fall Semester may be allowed to continue their studies during the Spring Semester, but will be subject to the authority of the Committee. The Committee determines whether students should be allowed to continue their studies.

For students who have attempted 15-30 credits, or more than 30 credits in one year, these standards prevail:

Good Academic Standing	2.0 to 4.0 QPA
Academic Warning	1.75 to 1.99 QPA (May continue normal program for one year.)
Probation	1.60 to 1.74 QPA (Probation for one semester. May not continue normal program and is subject to jurisdiction of Committee on Student Standing.)
Condition	1.50 to 1.59 QPA (Suspension for one semester.) An appeal may be allowed one semester of probation by a School's Committee on Student Standing and on clearance from Student Services in matters within their competence.
Dismissal	Less than 1.50 QPA (Readmission may be permitted by recommendation of a School's Committee on Student Standing.)

For students who have attempted 31-60 credits or who have attempted up to 61 credits within four semesters, the requirements are:

Good Academic Standing	2.0 to 4.0 QPA
Academic Warning	1.85 to 1.99 QPA (May continue normal program for one year.)
Probation	1.75 to 1.84 QPA (Probation for one semester. May not continue normal program and is subject to jurisdiction of a School's Committee on Student Standing.)
Dismissal	Less than 1.75 QPA (Readmission may be permitted by recommendation of a School's Committee on Student Standing.)

Students who have attempted 61 credits or more and who have a QPA of between 1.85 and 1.99 may continue on probation for one semester. However, students who have earned more than 90 credits must have a QPA of 2.0 or better or they are subject to dismissal. All students' records are evaluated for academic standing at the end of the Spring Semester. A student who accumulates three F's in one semester is subject to dismissal. Any appeals on academic standing must be directed to the individual School's Committee on Student Standing.

DEAN'S LIST

To achieve distinction of being named to the Dean's List, a student must have a record for a semester that shows completion of a full-time schedule, a quality point average of at least 3.25, and no grade lower than C. The full-time schedule must include at least 12 credits exclusive of pass/fail credits.

GRADUATE COURSES FOR UNDERGRADUATE CREDIT

Qualified seniors may be permitted to register in certain graduate courses at the 500 level for undergraduate credit on the recommendation of the advisor and with the approval of the dean of the graduate school involved. All 500 courses are described in the graduate school catalogs.

GRADUATION REQUIREMENTS

The candidate for a University degree must be a person of good moral character who has satisfactorily completed all academic requirements for the degree program and in addition has the recommendation of the appropriate Academic Dean, filed the Application for the University Degree with the Office of the Registrar on or before the latest date to apply for graduation as announced in the Academic Calendar, and paid all indebtedness to the University.

It is the student's responsibility to determine that the courses taken in each semester are sequentially correct and necessary for the degree program.

The student must periodically review in consultation with the appropriate academic advisor progress toward graduation and seek, with the advisor, the resolution of any question about fulfillment of graduation requirements.

Each school and each department sets forth in this catalog requirements for graduation which the student is expected to know, as well as the aforementioned general requirements, and the following:

1. The bachelor's degree requires a minimum of 120 semester hours of course credits in all except Medical Technology, Radiological Health, and Pharmacy which require, respectively, 125, 128, and 160 credits.
2. All bachelors' degrees require an overall minimum quality point average of 2.0, which is a C grade average in a 4.0 system. (Students should further determine the need for minimum QPA requirements in their major, science course, etc.)
3. The last year's work (a minimum of 30 semester hours of credit) must be completed in residence at the University.
4. Not less than three credits (or one course) in theology are required for all undergraduate Catholic students in every program at the University. This is a general requirement; individual schools may require additional course work in this area.
5. Students on academic probation may be candidates for graduation only with permission of the Committee on Student Standing of their school.

The candidate who has satisfied graduation requirements by a Challenge Examination (credit by examination), when taken timewise within the last 30 semester hours of study for the degree, will fulfill the residence requirement provided a

minimum of 30 semester hours of credit has been earned in course work at the University in the last year's study.

HONORS

Degrees are awarded with special mention *cum laude*, *magna cum laude*, or *summa cum laude* to students who have completed the regular course with unusual distinction and who have completed a minimum of 60 credits in residence. Honors are based on these standards:

Cum Laude—Quality Point Average	3.50 to 3.74
Magna Cum Laude—Quality Point Average	3.75 and above
Summa Cum Laude—Upon recommendation of the faculty and a 3.90, Magna Cum Laude citation may be raised to Summa Cum Laude.	

UNIT OF CREDIT

The unit of credit is the semester hour; i.e., one credit equals one semester hour. One semester hour of credit is granted for the successful completion of one hour a week of lecture or recitation, or at least two hours a week of laboratory work for one semester of 15 weeks.

TRANSFER WITHIN THE UNIVERSITY

It would be to the student's advantage to discuss the proposed transfer with the academic advisor of the new school no later than two weeks prior to preregistration. The advisor will then use the form and procedure established as uniform for the University to effect any change.

WITHDRAWAL FROM A COURSE

First semester freshmen may withdraw from courses, with the approval of their advisor, up to the period of final examinations and receive a grade of W by processing the proper form.

Up to the date announced in the Academic Calendar for withdrawal with a W grade, other students may withdraw from a course with the approval of their advisor and academic dean by processing the proper form.

If a student wishes to withdraw from a course during the period between the date announced in the Academic Calendar and the three weeks preceding the close of the semester, the student must seek the approval of the academic advisor and submit a letter of request to the Committee on Student Standing of the student's school. If approval is granted, the grade will be WP or WF as determined by the instructor of the course, and the student will be notified of the Committee's decision. The student then goes to the advisor to initiate the proper forms.

Should a student wish to withdraw from a course during the last three weeks of class, the student must do so through the advisor and a written request to the Student Standing Committee of his or her school. If permission is granted, the grade will be WF (except under extenuating circumstances). The student is notified of the Student Standing Committee's decision. The student then goes to the appropriate advisor to initiate the proper forms.

A student who is not granted approval of the request and withdraws from the

course unofficially, will receive the grade of F for the course.

WITHDRAWAL FROM THE UNIVERSITY

If a student finds it necessary to withdraw from all courses before the close of the semester, the student must write a letter stating the reasons for the withdrawal and then must present this letter to the Dean of the student's school. Complete withdrawal forms must be filled out for the Dean of the school, with copies to the appropriate offices. The policy for assigning grades will be the same as for withdrawing from a single course. A student who withdraws from the University and fails to notify the appropriate Academic Dean immediately and adequately will receive an F grade in all courses.

A resident student must notify the Director of Residence Life in advance of the planned withdrawal. No refund of room charges will be made where withdrawal occurs after the opening classes. In the event of withdrawal, board will be refunded at the rate of 75 per cent of the balance remaining on the student's meal plan, up until mid-semester. After the mid-semester point, no refund will be made. No reduction of charges nor refund of payments to which a student may have been otherwise entitled will be made if withdrawal is not in accordance with the official withdrawal procedure.

No student is permitted to remain in the residence halls after academic withdrawal from the University has been completed. After final examinations, if a student is unable to return for the next semester, he or she should notify the appropriate Dean and advisor.

STUDENT HANDBOOK

A Student Handbook that contains detailed information about practices and procedures of University policies that concern students is available to all new enrollees. It may be obtained from the Information Office in the Duquesne Union or from the enrollee's academic advisor.

Student Life

HELPING SERVICES

CAMPUS MINISTRY

In conjunction with the academic pursuits of the University, the Pastoral Office of Campus Ministry through its staff offers many opportunities for the student to be active in his religious development and continued spiritual growth by seeking ways of working out his relationship and responsibility to God and neighbor.

A varied schedule of daily and weekend Liturgies is provided. Priests are available for the Sacrament of Penance at regularly scheduled times and individually at any other pre-arranged time. The University Chapel remains open each day for prayer, reflection, and meditation. Evenings of recollection, weekend retreats, informal discussions and conversations, counseling, guest lecturers, and other special programs are some of the current activities of Campus Ministry. Open concerts of sacred music and recitals are given periodically during the year at the chapel.

All Campus Ministry activities are posted on the bulletin boards outside the chapel and in the Main Lobbies of each Residence Hall.

Students should feel free to stop in the Campus Ministry office at any time in the Administration Building (1st floor) or in the main lobby of the Towers.

CAREER PLANNING AND PLACEMENT

The Center assists students and alumni in formulating occupational goals, investigating vocational opportunities, and obtaining suitable jobs. Students in the early stages of career planning as well as those entering the labor market will find extensive and up-to-date resource materials in the Occupational Library.

The staff offers individual counseling and group guidance and may present special career seminars. A Career Advisors and Speakers Service is maintained through which persons may be engaged to participate in special career programs sponsored by student organizations, academic departments, and other groups.

Among the "placement" services offered by the Center are the campus interview program which allows seniors opportunity to compete for jobs or graduate school opportunities; and a job referral service that augments both the interview program and the candidate's own job seeking efforts. A credentials or references service is also offered.

Students interested in on-campus part-time or summer employment should contact the Center which administers the University's Student Aide Program. Information is also provided about jobs in the local community and other parts of the country.

HEALTH SERVICES

The Health Services Office is located on the Second Floor of the Duquesne Towers Residence Hall. Registered nurses are available on a regular schedule throughout the academic year. Clinic hours are conducted daily at specific hours, Monday through Friday, by the University physicians.

Primary health service is given to resident students, although emergency service is also available to commuter students, faculty members, and staff members. A completely equipped ambulance is maintained by the University for emergency use. Should an emergency occur when the Health Services office cannot be reached, the Safety and Security Department should be contacted immediately.

Health Service costs are included in room fees for resident students; however, all additional treatment by non-University physicians, clinics, or hospitals must be paid for by the student.

HEALTH INSURANCE

It is recommended that each student carry some form of health insurance. The University provides a Student Health Care Program which has been designed to meet the needs of the student and is priced lower than individual health insurance policies. Complete information regarding this insurance plan may be obtained from the University Insurance Officer, Second Floor of the Business Affairs Building. Note: The University is not responsible for medical expenses resulting from participation in intramural sports.

INTERNATIONAL STUDENT ADVISEMENT

The responsibility of the International Student Advisor is to be of service to all international students in the areas of adjustment, housing, and activities. Other services include the preparation of forms for extension of stay, assistance for obtaining summer employment where permissible by law, and upon graduation, the preparation of applications for practical training.

The International Student Advisor's office is part of the Office of the Dean of Students which is located in the Duquesne Union.

PSYCHOLOGICAL CENTER FOR TRAINING AND RESEARCH

The Psychological Center for Training and Research is staffed by the Psychology Department and is available to students for personal counseling. Counseling interviews provide the student with an opportunity for personal growth through the development of his ability to find his own solutions for difficulties of a personal nature. Single conferences or a series of interviews in individual or group counseling can be arranged at the Center's Office, which is located on the third floor of the Guidance Building. Hours are 9:00 A.M. to 5:00 P.M., Monday through Friday.

SYSTEMS CENTER

The Systems Center is a service department operated by the School of Business and Administration. Its main function is to make available to the students and faculty of the University the use of a modern computing system. Through the curriculum offered by the School of Business and Administration, the student is made cognizant of the potential uses for this new and powerful tool. Instruction in basic

programming is provided to the students to aid them in fulfilling their class assignments. Individual research projects by the students and faculty are encouraged.

An auxiliary function of the Systems Center is to provide data-processing services for the administrative offices of the University. Two of the services being provided are automated registration and grade reporting. Students who work in the Systems Center become involved with the problems of setting up and operating the data processing system.

The Systems Center Staff is responsible for programming and operating specialized programs such as the Duquesne University Management Game which is an important part of both the undergraduate and graduate curriculum.

TESTING BUREAU

The Testing Bureau, located on the third floor of the Administration Building, provides free testing and counseling to students. Various vocational interest inventories, personality type inventories, and aptitude tests are available to any interested student. Testing evaluation is geared towards helping students become more aware of patterns and preferences in their interests, abilities, and ways of relating to others so that they may make satisfying educational and career choices, achieve a better self-understanding and enhance their relationships with others.

A recent follow-up study of students who have utilized the services offered through the Testing Bureau, report that the combination of interest and personality inventories and talks with a counselor have helped them to direct and integrate their personal and educational involvements in planning toward their occupational goals. An appointment may be made by calling the Testing Bureau between 8:30 A.M. and 4:30 P.M.

Students can also obtain information and applications for national tests such as the Graduate Record Examination, National Teachers Examination, Law School Admissions Test, Medical College Admissions Test, the College Level Examination Program Tests, and the Miller Analogies Test.

ACTIVITIES AND FACILITIES

ATHLETICS

Duquesne University is a member of the National Collegiate Athletic Association, the Eastern Collegiate Athletic Conference, the Association for Inter-Collegiate Athletics for Women and the Eastern Association for Inter-Collegiate Athletics for Women. The University follows the rules of these organizations in determining a student's eligibility for a varsity team. The Athletic Department supports the following varsity teams: baseball, basketball, cross-country, golf, rifle, tennis, women's basketball, and women's volleyball. The golf, rifle, tennis, and bowling teams are open to both men and women athletes.

Prospective candidates for any of the teams may obtain applications from the Athletic Office in the Main Gymnasium. Those interested in applying for either of the women's teams may contact the Assistant to the Director of Athletics in University Hall. Duquesne's women's varsity basketball and volleyball teams compete with women's teams from other colleges and universities in the tri-state area. The

bowling team competes in the Club League of Western Pennsylvania. Candidates for all teams may apply for athletic grants-in-aid.

Football is an inter-collegiate sport funded under the Athletic Department budget, operating within Club Football Association rules. Those interested in participating in football should contact the Director of Athletics. No athletic grants-in-aid are offered for this sport.

DUQUESNE UNION

The Union is more than a unique building. It is an organization, a program, a service, and a spirit that has spread through Duquesne since it opened in March 1967. Through cooperative governance and management of its human and physical resources, the Union strives to stimulate individual self-development through interaction with diverse people and ideas. With a goal of community, all aspects of the Union—facilities, programs, and committees—are open to all segments of the campus—students, faculty, administrators, and staff.

PROGRAM BOARD

Student committees of the Union Program Board cooperatively organize a variety of programs each year. Funded by a portion of the University Fee, the Program Board coordinates and balances general campus programming under the supervision of the Union Governing Council.

The Union constitution permits considerable flexibility in its program committee structure; committees may be added or deleted according to student interest. This allows for new ideas to grow and become an active part of University activities.

Membership on Union Program Board committees is open to all students, challenging them to meet and share their talents in ways which promote individual growth and group effectiveness.

RESIDENCE LIFE

Residence Life is dedicated to the task of creating an environment in which a student can grow and develop as a total person. Its program is based on two assumptions: 1) the student's residence hall living experience can be an important part of the total university education; and 2) the residence hall staff with a defined educational mission can greatly enhance the opportunities for students to profit from their residence hall experience. Therefore, it is the purpose of Residence Life to facilitate the personal and academic growth of student living by striving to make the whole of residence life an educational experience. To this end, the professional and resident assistant staff will provide the wherewithal to facilitate such development.

Recognizing that each individual has unique talents and potentials, every effort is made to create a residence hall environment that is acceptable to each individual and open to his or her effort on this environment. It is the student who, actively becoming part of environment, enriches his or her own development. It is this aim that university living strives to accomplish.

In the belief that residence living adds to the educational opportunities of the individual student, the University reserves the right to require all undergraduate students who do not commute from their permanent home of residence to reside in

University residence halls. Availability of space currently limits implementation of this requirement to freshmen and sophomore students.

The parking situation is critical, largely because of the University's urban setting; therefore, resident students are discouraged from bringing automobiles to the campus unless absolutely necessary. Only a limited number of parking permits is available for resident students.

STUDENT GOVERNMENT

STUDENT GOVERNMENT ASSOCIATION

The Student Government Association is a student-created structure designed to provide a forum for the expression of student views and interests, to maintain academic freedom and responsibility as well as student rights, and to foster intelligent interest and participation in all phases of University life. A major function of the SGA is to serve as student representatives on important University committees, including the Administrative Council (advisory to the President) and the Council of Academic Deans (the highest academic board).

RESIDENCE COUNCIL

The Residence Council coordinates activities, enforces regulations within the residence halls, and promotes interest in campus affairs.

It is the aim of the Residence Council to serve as a link between the resident students and the administration. Aside from the council activities, representatives of the Residence Council serve on the Council on Student Services and the Food Service Committee to provide student input for the formulation and review of University policies affecting residence life.

INTER-FRATERNITY COUNCIL

The Inter-Fraternity Council serves as a clearing house for general fraternity social information and as a forum for airing constructive proposals for the improvement of the fraternity system. Membership in the Council is composed of three elected or appointed representatives from each of the 10 member fraternities. The IFC establishes all rules governing inter-fraternity sports and regulates pledging.

PAN-HELLENIC COUNCIL

The Pan-Hellenic Council was established for the purpose of strengthening women's fraternities as organizations and for promoting cooperation among women fraternities through scholastic, athletic, and social activities. Membership in the Pan-Hellenic Council is composed of the presidents and elected representatives of each of the six women's social fraternities. Pan-Hellenic Council establishes all rules concerning the rushing and pledging of new fraternity members.

STUDENT ORGANIZATIONS

There are more than 100 active student organizations at Duquesne. Some serve the needs of such specific groups as minority students, veterans, residents, and commuters. Others relate directly to major areas of study. Some honor academic achievement. Many are formed to meet religious, service or social needs and in-

terests. Whatever their purpose, these organizations and their activities comprise a major part of campus life.

HONOR SOCIETIES

These societies have as their primary purpose recognition of scholarship achievement and academic excellence and are members of the Association of College Honor Societies.

PROFESSIONAL AND DEPARTMENTAL ORGANIZATIONS

These professional organizations exist to provide the fertile ground for the growth of informal exchange of ideas pertinent to the student's academic pursuits. With this purpose in mind, these organizations sponsor numerous programs including debates, symposiums, and lectures.

SERVICE ORGANIZATIONS

The purpose of these nationally-affiliated organizations is to provide a high standard of service to the campus and local communities while, at the same time, developing the leadership qualities of and cooperation among each member of the organization. With this purpose in mind, service organizations sponsor a wide variety of professional, service, charitable, and social programs.

SOCIAL ORGANIZATIONS

Social organizations are composed of college men and women who have joined together to enhance their identities by sponsoring and promoting social, athletic, cultural, and academic events. Many of these organizations belong to Inter-Fraternity Council or Pan-Hellenic Council.

TAMBURITZANS

The Duquesne University Tamburitans were founded in 1937 at the University and were the first university-based performing folk ensemble in the United States. The group takes its name from the Tamburitza family of stringed instruments, indigenous to the folk cultures of Southeastern Europe. The group exists for the dual purpose of preserving and perpetuating the Eastern European cultural heritage in the United States and offering scholarship opportunities to deserving students.

THEATRE

The Red Masquers serves to provide an extra-curricular outlet for students who wish to participate in the theatre. Its aim is to provide the University and its students with educational and cultural benefits that accrue from a dramatic program. In line with these objectives, the Masquer's program offers a variety of stage entertainment—one-act plays, musicals, comedies, tragedies. Any Duquesne student is eligible for membership.

PUBLICATIONS

The Duquesne Duke, the University campus newspaper, is written and edited by the students for the students. It appears every Thursday during the academic year except during examination periods and holidays, and provides an array of campus news, student opinions, editorials and advertisements. The paper is geared to all

members of the University; administrators, faculty members, employees, and most of all students. Membership in the Duquesne Duke is open to all students.

The Duquesne Magazine is a literary publication, published each semester, which affords students the opportunity to submit writing, artwork, and photographs.

L'Espirit du Duc, the yearbook, highlights the events of the previous year to remind all graduates of their alma mater. It is mailed to all seniors after their graduation.

WDUQ RADIO AND TELEVISION

The University's radio station (WDUQ—90.5 F.M.) and television (closed circuit) provide academic support to the individual schools and departments through seminars, workshops, laboratory experience, and extracurricular opportunities in communication skills for individuals and groups. Most positions on the staff are filled by students. The University radio station operates on a 25,000 Watt frequency over a radius of seventy miles.

College of Liberal Arts and Sciences

HISTORY

In 1878 the Fathers of the Congregation of the Holy Ghost and the Immaculate Heart of Mary established a College of Arts and Letters which was incorporated in 1882 as Pittsburgh Catholic College of the Holy Ghost with authority to grant degrees in the arts and sciences. In 1911 the College and University Council of the Commonwealth of Pennsylvania extended the charter to university status and approved the amendment in favor of the corporate title, Duquesne University.

PHILOSOPHY AND OBJECTIVES

Duquesne University believes that education is concerned with the human person as a whole—mind, body and soul. It believes that each individual has the obligation to self, society, and God to develop potential to the fullest. In this commitment, the College of Liberal Arts and Sciences sets its objectives and forms its curricula.

The objectives of the College are:

1. To provide a solid foundation for lifelong learning.
2. To develop an awareness of the methodologies and epistemologies of the major areas of knowledge so that evaluations and judgments may be valid.
3. To assist in both the growth of self-knowledge and the development of a philosophy of life.
4. To assist the individual to understand his relation to God, to society, and to nature.
5. To perfect that skill in the use of standard English necessary to clear, coherent expression of one's thoughts, hopes, and ideals.
6. To cultivate a background for the learned professions and for scholarly pursuits.

CURRICULAR REQUIREMENTS

English Composition	— Proficiency at the 102 level
Modern or Classical Language	— Proficiency at the 202 or 212 level
Natural Sciences (Biology, Chemistry, Earth Sciences, Physics, Mathematics)	— Nine Credits. One two-semester sequential course must be completed.
Social Sciences (Political Science, Psychology, Sociology)	— Nine credits. At least two disciplines must be represented.

History, Literature	— Nine credits. Both disciplines must be represented.
Philosophy, Theology	— Nine credits. Both disciplines must be represented.
Communications (Journalism, Linguistics, Speech)	— Three credits
Completion of Major Program	— As determined by department (Minimum of 24 credits)
Completion of Minor Program	— As determined by department offering the minor (Minimum of 12 credits above the introductory courses)

Students who major or minor in a basic area automatically satisfy the area requirements for that discipline.

A student's major and minor programs may not be chosen from the same department. (Modern Language majors may minor in another language.)

ACADEMIC REQUIREMENTS

Completion of 120 credits

A minimum cumulative over-all quality point average of 2.0

A minimum cumulative quality point average in the major of 2.0

Removal of I and F grades in required courses

Completion of sequential courses in proper sequence

Completion of the residence requirement. The last 30 credits must be taken at the University.

Submission of application for the degree. No student is considered a degree candidate until he files an application for the degree on a form provided by the Registrar.

PROGRAMS

SEMINARY PROGRAM

English Composition	— Proficiency at the 102 level
History	— Two semesters (Six credits)
Language	— Eight semesters of language. At least four semesters must be in a classical language
Literature	— Two semesters (Six credits)
Philosophy	— 18 credits
Science/Mathematics	— Six credits
Social Sciences	— Nine credits (Two disciplines must be represented)
Theology	— A minimum of three credits
Completion of a major in Classics or Philosophy	

PRE-ENGINEERING PROGRAM

The pre-engineering course is a two-year program designed to prepare a student for entrance into a school of engineering. Program consists of: Calculus 115, 116, 215, 12 credits; General Analytic Physics 211, 212, 8 credits; Ordinary Differential Equations 216, 4 credits; General Chemistry 121, 122, 9 credits; English Composition 101, 102, 6 credits; balance of credits in electives.

PRE-LAW PROGRAM

Students who intend to prepare for a career in law may select any subject area for the undergraduate major. They will be expected to meet degree requirements in the major department, as well as admission requirements of the law school of their choice.

PRE-MEDICAL PROGRAM

Students who intend to prepare for a career in medicine, dentistry, veterinary medicine, or related fields may major in the subject area of their choice and should select a major as soon as possible. They must meet degree requirements of the major department, as well as admission requirements of the professional school of their choice. A faculty committee on Pre-Medical Education assists the medically-oriented student.

BACHELOR-MASTER'S PROGRAM

A student who has completed all requirements and a total of 90 credits with a 3.5 average may apply for the bachelor/master's program. After successful completion of the master's program, the student will receive the bachelor's degree.

BACHELOR'S/PROFESSIONAL SCHOOL PROGRAM

A student who has completed 90 credits with a 3.50 overall average and satisfied all undergraduate curricular requirements may apply for the bachelor's degree after the successful completion of the first year of professional work in an accredited medical or law school.

SECOND BACHELOR'S DEGREE

A student who has received a bachelor's degree from another school may become eligible for a second bachelor's degree by earning an additional 30 semester hours in residence in the College of Liberal Arts and Sciences and by meeting all departmental and College requirements if not already satisfied.

THREE-YEAR BACHELOR'S PROGRAM

For information contact the Office of Admissions or the Dean of the College.

CLEP AND ADVANCED PLACEMENT

See page 11.

ACADEMIC REGULATIONS**ACADEMIC LOAD**

Students may normally carry five courses in one semester. A schedule of more than five courses or 17 credits must be approved by the Dean. In the summer sessions,

students normally carry one credit a week; i.e., six credits in the six-week session. A 12-credit schedule in a regular semester is considered full-time study.

EFFECTIVE CATALOG

Degree requirements are those stipulated in the catalog of the year in which a student matriculates. The student is responsible for knowing the requirements for the degree.

CREDIT-BY-EXAMINATION

Credit-by-examination is available to students who by previous experience or exposure have acquired mastery of the knowledge in a particular course. Arrangements are made through the department chairman. Students must be currently registered when they apply for and take examinations for credit. The examination grade must be approved by the appropriate Department Chairman and Dean.

COURSE DESCRIPTIONS

Department of Biological Sciences

Chairman: Howard G. Ehrlich, Ph.D.

Biology is the scientific exploration of life in its many forms and details. To study biology is to pursue an intellectual challenge which provides insight into one's self and enables one to acquire knowledge vital to responsible citizens in societies beset by many serious problems having biological implications.

The undergraduate program is basic and aids in preparing students for professional careers in teaching, medicine, dentistry, veterinary medicine, and advanced study in graduate school. In addition, graduates are qualified as laboratory technicians, and are able to pursue positions in pure and applied research in hospitals, universities, private industry, and civil service. Numerous and diverse opportunities are available in pharmaceutical laboratories, medical research laboratories, atomic energy research laboratories, chemical laboratories, food processing and control laboratories, meat packing, canning, forestry, wildlife management, fisheries, oceanography, conservation, health services, space biology, dairy and agricultural production, food and drug administration, environmental services, and others.

REQUIREMENTS FOR THE MAJOR

A minimum of 31 semester hours is needed. Majors are required to take General Biology 111, 112 and to select other courses so that a balance is achieved with experience in the biology of inheritance, structure, and function at the molecular, cellular and organismal levels. The specific program selected is individually formulated for the student through consultation with an advisor. Qualified seniors are

encouraged to take 500 level Biology graduate courses (such as 503-Cell and Fine Structural Biology, 505-Cell and Molecular Biology, 507-Laboratory Techniques, 511-Comparative Vertebrate Physiology, 512-Mammalian Physiology, 513-General Endocrinology, 520-Experimental Embryology, 523-Invertebrate Physiology, 525-Comparative Microbiology, 531-Biology of Fungi, 580-Urban Ecology) listed in the Graduate School Catalog. Students should consider extradepartmental electives in chemistry and mathematics. Courses 107, 108, 201, and 202 will not be counted toward a major in Biology. Extradepartmental Requirements: Calculus 115; General Chemistry 121, 122; Organic Chemistry 205, 206 or 221, 222; General (or Analytical) Physics 201, 202 or 211, 212.

REQUIREMENTS FOR THE MINOR

A minor consists of 111, 112 and a minimum of 12 credits selected from the department's major courses, numbered 200 or above; individual course prerequisites must be met.

If a student takes 107, 108 and 111, 112, the credits for 107, 108 will not apply to the total number required for the degree.

107, 108. Principles of Biology.

3 cr. each

Study of the living world of which man is an integral part. It includes considerations of organization, activity, growth, reproduction, inheritance, environmental influences and other interrelationships. This course is designed to provide the non-scientist with the biological information and principles necessary to assume an enlightened role in our increasingly complex society. Does not carry credit toward a Biology Major; 107 is prerequisite to 108. Lecture, three hours.

111, 112. General Biology.

4 cr. each

Introduction to the scientific study of life at the molecular, cellular and organismal level. It involves consideration of relevant structure, function, development, reproduction, inheritance, evolution and ecology. This course provides the basic information and concept necessary to understand living systems, their activity and interrelationships. 111 is prerequisite to 112. Lecture, three hours; Laboratory, three hours.

201. The Biology of Microbes

4 cr.

Examination of microbes as to what they are, how they grow, how they may be controlled, what their relationships to other living things are, why and how some of them cause disease. This course does not carry credit toward a biology major. Lecture, three hours; Laboratory, three hours.

202. Biology of Sex.

3 cr.

A consideration of reproductive mechanisms and sex as universal biological functions with emphasis on human physiology, genetics, behavior, sexuality and their implications for modern society. Does not carry credit toward a Biology Major. Lecture, three hours.

203. Genetics.

4 cr.

A study of the mechanisms of inheritance and their resulting effects on individuals and populations, including their implications in the life of man. Principles and details, methods and applications are illustrated with specific examples drawn from a wide range of species, from micro-organisms to man. Prerequisite: 108 or 112. Lecture, three hours; Laboratory, two hours.

- 205. Vertebrate Macrostructure.** **4 cr.**
A comparative study of the gross structure of vertebrates and the relationship of that structure to function and evolution. Prerequisite: 112. Lecture, three hours; Laboratory, three hours.
- 206. Vertebrate Microstructure.** **4 cr.**
A study of tissue and organ structure and the relationship of that structure to function. Prerequisites: 112 and 205 or permission of the instructor. Lecture, three hours; Laboratory, three hours.
- 212. Animal Development.** **4 cr.**
A comparative study of the morphological and physiological aspects of animal development emphasizing current experimental approaches. Prerequisite: 112. Lecture, three hours; Laboratory, three hours.
- 214. Plant Development.** **4 cr.**
Examines the unique features of representative types of plants, as revealed by interrelationships of form, function and morphogenesis. Prerequisite: 112. Lecture, three hours; Laboratory, three hours.
- 301. Invertebrate Biology.** **4 cr.**
The morphology, systematics, life histories and ecology of invertebrate animals, with emphasis on diversity of forms. Prerequisite: 112 or equivalent. Lecture, three hours; Laboratory, three hours.
- 302. Animal Parasitology.** **4 cr.**
Principles of parasitism, and general biology of animal parasites from protozoans through arthropods. Prerequisites: 112 and 301. Lecture, three hours; Laboratory, three hours.
- 311. Cell Physiology.** **4 cr.**
A study of cells with regard to: means of obtaining energy including respiration, fermentation, and photosynthesis; work done by the cell including biosynthesis, active transport, and cell movement; cell growth and differentiation; relationships of cell structure to these processes. Prerequisites: 112 and organic chemistry. Lecture, three hours; Laboratory, three hours.
- 312. Physiology of Reproduction.** **4 cr.**
Includes the anatomy, histology, physiology, biochemistry, and endocrinology of vertebrate reproduction. The main emphasis is on the physiology of puberty, estrous and menstrual cycle, conception, pregnancy, and parturition. The physiological basis of fertility and infertility also are included. Prerequisites: 112 and 205 or 212. Lecture, three hours; Laboratory, three hours.
- 314. Animal Physiology.** **4 cr.**
An introduction to the fundamental mechanisms of body function in animals. Prerequisite: 112. Lecture, three hours; Laboratory, three hours.
- 315. Plant Physiology.** **4 cr.**
Varied studies of the growth requirements and regulatory mechanisms of important plant types, with emphasis upon environmental control. Prerequisites: 112 and 214. Lecture, three hours; Laboratory, three hours.
- 317. Microbiology.** **4 cr.**
Classification structure, function, and metabolism of microorganisms. Prerequisites: 112 and organic chemistry. Lecture, three hours; Laboratory, three hours.

318. Natural History of Infectious Diseases.**3 cr.**

The natural history of infectious diseases is considered from the aspect of host-parasite relationships. The process of infection, the outcome of the relationship and epidemiologic patterns of diseases will be studied. These concepts are explored by understanding the biology of the parasite and the mechanisms of resistance and immunity of the host. Diseases associated with bacteria, viruses, fungi, protozoans, and helminths are covered. Prerequisite: 112. Lecture, three hours.

320. Molecular Genetics.**4 cr.**

Molecular basis of genetic control mechanisms in cells and organisms with emphasis on microorganisms. Prerequisites: 112 and 311 or 317. Lecture, three hours; Laboratory, three hours.

411. Ecology.**3 cr.**

Critical examination of the principles and procedures underlying ecological thought, stressing the ecosystem concept and its implications for human activity. Prerequisite: 112, Lecture, three hours.

412. Ecology Laboratory.**1 cr.**

Laboratory, including possible field work, illustrates selected subject matter of 411. Prerequisites: 112 and 411; may be taken concurrently with 411.

414. Regulatory Physiology.**4 cr.**

Treatment of physiological and environmental regulations with emphasis on neuroendocrine integration and adaptation. Prerequisites: 112 and 311 or 314. Lecture, three hours; Laboratory, three hours.

416. Evolution.**3 cr.**

History, development, concepts, and evidences of evolution with emphasis on modern studies in evolutionary biology, including an introduction to population genetics. Prerequisites: 112 and 203 or 320. Lecture, three hours.

419. Special Topics.**1-3 cr.**

Treatment of topics of current or special interest in biology. Lecture, laboratory, or combinations.

421, 422. Undergraduate Research.**2 cr. each**

Opportunity for selected students to work on research problems under the direction of a faculty member; 421 is not prerequisite to 422. Maximum of four credits. Registration by permission of instructor.

Department of Chemistry

Chairman: Andrew J. Glead, III, Ph.D.

The Chemistry program is designed to provide the student with a fundamental background in chemistry and an understanding of the relationship of chemistry to the other sciences and disciplines. Elective courses and the opportunity to do undergraduate research allow the chemistry major to develop interests in a specialized area of chemistry, such as analytical, inorganic, organic, physical chemistry, and biochemistry.

Because of the fundamental nature of chemistry as a science, numerous opportunities for advanced study, as well as immediate employment, are open to the chemistry major. A large percentage of students elect to continue their study in graduate programs in chemistry and related fields. Chemists and biochemists provide a core of personnel in pure and applied research, technical sales, technical libraries, and management positions in the chemical and related industries, the space industry, the health professions, education and the environmental sciences. The major in biochemistry centers around the core of basic chemistry courses while also providing advanced courses in biochemistry and electives in biology.

REQUIREMENTS FOR THE CHEMISTRY MAJOR

Thirty-two semester hours are required. All students must take 121, 122, 221, 222, 321, 322, 323, 324, 421, 422. To meet the American Chemical Society's requirements for Professional Certification, the student must elect two additional courses from the following: 401, 523, 524, 537, 538, 545, 546, 571, 572, Mathematics 216 or 308; Pharmaceutical Sciences 525, 539; one of the courses must be a laboratory course. This laboratory requirement can also be fulfilled with Chemistry 490.

Extrdepartmental Requirements: Mathematics 115, 116, 215; Physics 201, 202, or 211, 212; Biology 111, 112 and 202 or 212; proficiency in German, Russian, or French.

REQUIREMENTS FOR THE BIOCHEMISTRY MAJOR

Thirty-two semester hours are required. All students must take 121, 122, 221, 222, 321, 323, 401, 421, and 524. In addition two biology electives should be selected from Biology 317, 311, and 320. Students planning to enter a graduate chemistry department should take Chemistry 322 and 324.

If a student takes 111, 112 and 121, 122, the credits for the 111, 112 will not apply to the total number required for the degree. Courses 102, 103; 205, 206 will not be counted toward a major.

Extrdepartmental Requirements: Mathematics 115, 116; Physics 201, 202 or 211, 212; Biology 111, 112; proficiency in German, Russian or French.

REQUIREMENTS FOR THE MINORS

A minor in Chemistry consists of 12 credit hours beyond Chemistry 121, 122. A minor in Biochemistry consists of 12 credits, beyond Chemistry 121, 122. Normally Chemistry 205, 206 or 221, 222 along with Chemistry 401, will constitute the Biochemistry minor.

101, 102. Chemistry and Society.

3 crs. each

The impact of chemistry on society reaches every phase of life. The course attempts to provide a link between chemical principles and the complexities of our rapidly changing society. In the first semester, the basic concepts of chemistry are developed for the non-science student. Through consideration of a series of environmental topics, the student is challenged to broaden his perspective by applying chemical concepts to an understanding of chemistry and the relationship to our physical environment. The course deals with the significance of developments in chemistry as seen in immediate benefits to man and in the long-term impact on society. The second semester deals with the biochemistry of living systems. Chemical principles are used to explain the normal life processes of photosynthesis, respiration, growth as well as abnormal conditions such as drug action, poisons, etc. on metabolic reactions. The student is made aware of the biochemical unity that prevails among the many complex and diverse forms of life. The first semester is a prerequisite to the second semester for those who have not had high school chemistry. Lecture, three hours.

111, 112. Principles of Chemistry

4 cr. each

The course is divided into three segments, physical, organic, and biochemistry. In the section devoted to physical chemistry the laws of chemical behavior are developed with particular reference to the simple molecules of inanimate nature. The organic section deals primarily with the structural features of organic compounds, the chemistry of functional groups and the practical applications of organic compounds in the synthesis of polymers, of carbohydrates, lipids, proteins, nucleic acids, enzymes, vitamins, etc. Biochemistry is treated in terms of the digestion and metabolism of nutrients, the function of enzymes in the metabolic process and the abnormal metabolic conditions that prevail in disease. Lecture, three hours; Recitation, one hour; Laboratory, two hours.

121, 122. General Chemistry.

The fundamental principles and concepts of chemistry are presented from the standpoint of atomic and molecular structure with illustrative examples from descriptive chemistry. The basic concepts of thermodynamics, chemical kinetics and equilibrium are introduced. The laboratory portion of the first semester illustrates physical and chemical properties in a quantitative manner, and the laboratory portion of the second semester illustrates the principles of ionic equilibria including qualitative inorganic analysis.

121.

4 cr.

Lecture, three hours; Recitation, one hour; Laboratory, three hours.

122.

5 cr.

Lecture, three hours; Recitation, one hour; Laboratory 6 hours.

205, 206; 221, 222. Organic Chemistry.

4 cr. each

The theoretical background is developed from the standpoint of the electronic structure of molecules and the accompanying energy considerations. The preparation and the chemical and physical (including spectral) properties of representative organic com-

pounds are discussed in detail. Prerequisite: 121, 122. For 205, 206, Lecture, three hours; Recitation, one hour; Laboratory, four hours; and for 221, 222, Lecture, three hours; Recitation, one hour; Laboratory, six hours.

321, 322. Physical Chemistry **3 cr. each**

A study of the structure and properties of the various states of matter; thermodynamics, thermochemistry, kinetics and an introduction to chemical physics. Prerequisites: Physics 202 or 212, Chemistry 122, Mathematics 116. Lecture, four hours.

323, 324. Physical Chemistry Laboratory. **1 cr. each**

Laboratory portion of Chemistry 321, 322, four hours.

401. Introductory Biochemistry **4 cr.**

An introduction to biochemistry at the cellular level. The structure and chemistry of cellular components (proteins, nucleic acids, etc.), of cellular reagents (enzymes, coenzymes, respiratory pigments, etc.) and metabolic reactions of carbohydrates, lipids and amino acids are discussed. Prerequisite: 206 or 222. Lecture, three hours; Laboratory, four hours.

421. Analytical Chemistry **4 cr.**

Theoretical and practical training in modern methods in chemical analysis with emphasis on instrumental methods. Prerequisite: 322. Lecture, three hours; Laboratory, eight hours.

422. Inorganic Chemistry **4 cr.**

A survey of the basic principles required for understanding inorganic chemistry including atomic and molecular structure, crystal structure, non-aqueous solvents and coordination compounds. Prerequisite: 322. Lecture, three hours; Laboratory, four hours.

490. Undergraduate Research. **Maximum 2 cr.**

Selected students work on a research problem under the direction of a staff member.

524. Molecular Basis of Biochemistry **3 cr.**

A discussion of the chemistry of amino acids and proteins from the viewpoint of structure, physical chemistry and analysis. An introduction to enzyme chemistry is also included in the course. Prerequisite: 401.

Department of Classics

Chairman: Cornelius C. Holly, C.S.Sp., Ph.L.

For the student who seeks something more than the mass-produced, plastic culture of contemporary life, the Department of Classics offers courses, both in the original languages and in translation, designed for the enrichment of the individual as a human person. These courses cover a vast period of Western cultural history extending from Homer to the Renaissance. The course material is, moreover, not studied in isolation but in conjunction with the best of contemporary thought and creative expression.

REQUIREMENT FOR THE MAJOR

A candidate for the Bachelor of Arts degree will be expected to take at least 24 credits in Latin and Greek with a minimum of 18 credits in one language and a minimum of six credits in the other. Classics 311 and 312 (Survey of Sanskrit Literature) may be substituted for the minimum of six credits. Credits applied to the major must be at the 200 level or above. Latin Prose Composition will be required for the major at the discretion of the Chairman. Six credits of ancient history (Classics 325, 326, 337, 338) are required in addition for any major.

With prior departmental consent, students may substitute either Classics 323, 324 for one course in their 18-credit language requirement.

Ancient art and ancient philosophy courses are recommended.

REQUIREMENTS FOR THE MINOR

The department offers a minor in *Latin* (a minimum of 12 credits above the 100 level); a minor in *Greek* (a minimum of 12 credits above the 100 level); and a minor in *Classical Civilization* with concentrations in Greek Civilization, Roman Civilization, Ancient History, and Ancient Art and Literature (12 credits above the 100 level) with the approval of the department and advisors.

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|--|-------------------|
| 101, 102. Basic Latin. | 4 cr. each |
| Study of the fundamentals of Latin grammar and syntax combined with occasional exercises in translation from Roman authors. | |
| 103, 104. Basic Greek. | 4 cr. each |
| Study of the fundamentals of Greek grammar and syntax combined with frequent exercises on translation from Greek authors. | |
| 105, 106. Basic Sanskrit | 3 cr. each |
| A study of the fundamentals of Sanskrit grammar and syntax combined with exercises in translation. Some previous foreign language experience is desirable. | |
| 201, 202. Introduction to Latin Readings. | 3 cr. each |
| A selection of readings from ancient and medieval prose and poetry (including the Vulgate and Christian writers) to illustrate the changing currents of ancient thought. | |
| 203. Introduction to Greek Readings. | 3 cr. |
| Selected readings from Plato. | |
| 204. Introduction to Greek Readings. | 3 cr. |
| Selected readings from the New Testament. | |
| 301. Survey of Latin Poetry. | 3 cr. |
| Selections from the major Latin poets with emphasis on the development of poetic techniques. Prerequisite: Classics 102 or equivalent. | |
| 302. Survey of Latin Prose Literature | 3 cr. |
| A complementary course to Latin Poetry which surveys the major prose authors of the Roman world. Prerequisite: Classics 102, or equivalent. | |
| 303. Survey of Greek Poetry | 3 cr. |
| Selections from the major Greek poets with emphasis on the development of poetic techniques. Prerequisite: Classics 104 or equivalent. | |

- 304. Survey of Greek Prose Literature** **3 cr.**
A companion course to Greek Poetry with selections from one or more Attic writers and emphasis on style and syntax. Prerequisite: Classics 104 or equivalent.
- 305. Latin Prose Composition** **3 cr.**
Translation from English to Latin to strengthen command of the idioms and style of the Latin language.
- 307. Biblical and Patristic Greek.** **3 cr.**
Selections from a wide variety of Biblical and Christian Greek authors. Prerequisite: 303-304 Greek.
- 308. Patristic Latin** **3 cr.**
Selections from a wide variety of Christian Latin authors. Prerequisite: 301-302 Latin.
- 311, 312. Survey of Sanskrit Literature** **3 cr. each**
Selected readings from major Sanskrit texts including the *Mahabharata*, *Hitopadesha*, *Kathasaritsagara*, *Manavadharmaśāstra*, and *Rigveda*.

The following will be taught as Latin or Greek courses or, for those students who are qualified, as combination Latin and Greek courses.

Each course will cover an individual author or group of authors or a *genre*. Each course may be repeated as long as a different author or work is read.

Prerequisite for 400 courses is one year of courses at the 300 level or the equivalent.

- 401, 402. Pre-Fifth Century.** **3 cr. each**
The *Iliad*, the *Odyssey*, the *Homeric Hymns* and other epic literature, Hesiod, Pindar, Greek lyric poetry and the pre-Socratics.
- 403, 404. Fifth Century.** **3 cr. each**
Herodotus, Thucydides, Aeschylus, Sophocles, Euripides and Aristophanes.
- 405, 406. Fourth Century** **3 cr. each**
Greek orators, Plato, Aristotle, Xenophon, Menander and Theophrastus.
- 407-408. Alexandrian Period.** **3 cr. each**
Apollonius Rhodius, Theocritus, Callimachus and the lesser Alexandrian authors.
- 409, 410. Roman Republic.** **3 cr. each**
Remains of early Latin, Plautus, Terence, Polybius, Cicero, Lucretius, Catullus, Caesar, and Sallust.
- 411, 412. Augustan Age.** **3 cr. each**
Livy, Vergil, Horace, Ovid, Propertius, Tibullus, Manilius, Dionysius of Halicarnassus, *Res Gestae*.
- 413, 414.** **3 cr. each**
Seneca, Lucan, Petronius, Martial, Plutarch, the Silver epic, Josephus, *Demetrius on Style*.
- 415, 416. Later Imperial Literature.** **3 cr. each**
Tacitus, Juvenal, Pliny the Younger, Suetonius, Apuleius, Lucian, Dio Cassius, Marcus Aurelius.

- 417, 418. Post Classical Literature.** 3 cr. each
Selections from post classical, mediaeval, renaissance and neo-Latin authors.
- 419. Studies in Genre.** 3 cr.
Selected *genre* of Greek and/or Latin literature.
- 420. Senior Seminar.** 3 cr.
- 421, 422. Independent Readings and Research.** Var. cr.
- 472. Elementary Biblical Hebrew.** 3 cr.
Study of basic grammar and reading of selected texts from the Pentateuch. Open to senior seminary students.

Classics courses in English: (No Greek or Latin required)

- 121. General Etymology.** 3 cr.
A study of Greek and Latin words to facilitate the comprehension of modern English as it is written by our acknowledged modern masters.
- 122. Etymology of Scientific Terms.** 3 cr.
Introduction to Greek and Latin elements of scientific terminology.
- 123. Classical Mythology.** 3 cr.
A presentation of the major myths of Greece and Rome with special attention to contemporary interpretations of myth and the influence of myth on art and literature.
- 320. Seminar.** 1-3 cr.
Topics variable.
- 323. Masterpieces of Greek Literature in Translation.** 3 cr.
This course will examine the major documents of our Greek literary heritage, such as the works of Homer, Aeschylus, Sophocles, Euripides, Herodotus and Thucydides, from the point of view of their literary and cultural contribution to the intellectual development of the Western world.
- 324. Masterpieces of Latin Literature in Translation.** 3 cr.
Ancient Roman comedy, epic, elegy and satire will be read. Modern interpretive techniques will be used to place these works in the proper context of their literary and cultural tradition.
- 325. Greek History** 3 cr.
An examination of the development of Greek history and culture from earliest times up to the death of Alexander of Macedon.
- 326. Hellenistic History.** 3 cr.
A survey of Mediterranean history from the death of Alexander until the accession of Octavian and the establishment of the Roman principate.
- 328. The Classical Tradition in America.** 3 cr.
A study of the influences of Graeco-Roman civilization on American cultural life, with special emphasis on its influence on American literature.
- 337. Roman Imperial History.** 3 cr.
A study of the consolidation and dissolution of the Roman Imperial structure up to the death of Justinian in 565 A.D.

- 338. Ancient Indian History.** **3 cr.**
An investigation of ancient Indian history, art and literature up to the time of the Delhi Sultanate.
- 340. Greek Religion.** **3 cr.**
An examination of the continuity of Greek religious experience from ancient times to the present and of the interconnection of ancient Greek religious ritual, moral experience and religious thought.
- 341. Roman Religion.** **3 cr.**
A study of Roman religious beliefs and practices with attention to the development of hero cults, oriental mystery religions and philosophical sects as alternatives to traditional religion.

Department of Economics

Chairman: Som Prakash, Ph.D.

REQUIREMENTS FOR THE MAJOR

Twenty-four semester hours are required for a major. These credits must include 101, 102, 213, or 211, 212 and 301, 302. (101, 102, or 211, 212 are prerequisites to all advanced courses.)

Extradepartmental requirements: Analytic Methods 201, 202 in the School of Business and Administration or Mathematics 225 in the College Mathematics Department. Students planning to do graduate work in economics are advised to take calculus.

REQUIREMENT FOR THE MINOR

Eighteen semester hours are required for a minor. The required introductory level courses are 101 and 102 or 211 and 212. In certain cases, it would be advisable to take 213 as an elective. It is strongly suggested that students having selected Economics as a minor, consult with the Economics Department chairman for advisement purposes.

- 101. Elements of Economics.** **3 cr.**
Economics 101 is an introductory course in economics intended to afford an understanding of how our economic system works, of the forces which affect the level, composition, and distribution of the output of the economy, and of the issues behind current economic problems. The course content will define concepts, provide background materials, and develop economic ideas necessary to an understanding of the policy issues constantly before a complex dynamic economy.
- 102. Introduction to Macro Economics.** **3 cr.**
The emphasis is on the application of macro economic principles. A series of basic economic problems and issues will be examined in terms of an understanding of the basic problem. How can society achieve and maintain a full employment economy with reasonable economic stability.

213. Introduction to Micro Economics.**3 cr.**

The primary aim of this course is to enhance and deepen the students' understanding of the market mechanism and how this mechanism responds to various governmental policies. More specifically, this course should enable the student to apply micro economic reasoning to current public issues, and use benefit-cost methodology in analyzing government expenditures.

The above set of courses has been designed for non-business students. However, taking of one course does not obligate the student to take any additional courses in the sequence.

105. Economics of Discrimination.**3 cr.**

The main interest of this course is the diagnosis of the nature and causes of the problem of social, economic and educational underutilization and underdevelopment of Black America. The course aims at the historic delineation of the factors responsible for this situation and the programs current and possible that may be utilized to improve the situation.

107. Economic Development of Europe and America.**3 cr.**

A survey of the evolution of western economic institutions and practices. Emphasis is given to the origin of capitalism, the Commercial and Industrial Revolutions, the rise of the bourgeoisie and the spread of capitalism. A study is also made of the institutional development and productive growth of the United States economy. Not counted toward the major.

211. Principles of Economics I.**3 cr.**

The first course in economics for the student who plans to major or minor in economics. The course seeks to acquaint the student with concepts and the logical basis to economic reasoning. Emphasis is placed on understanding the behavior of households and firms under competitive and imperfectly competitive market conditions.

212. Principles of Economics II.**3 cr.**

This course is primarily concerned with aggregative economic relationships. The theory of the determination of national income is developed and attention is given to the construction of national income accounts. Attention is given to monetary and fiscal policy and their implications.

301. National Income Analysis.**3 cr.**

A conceptual analysis of national income theory, its tools, its basic principles and its social and economic significance. It is concerned with explaining the development and nature of national income aggregates. The basic principles of national income theory are developed and explained in order to place into focus the operations of an economy and the many problems relating to it. Prerequisites: 211, 212 or 101, 102.

302. Price and Production Economics.**3 cr.**

An intensive study of the theory of demand, production and distribution. In addition, recent developments in the theory of imperfect competition and oligopoly are carefully examined. Prerequisites: 211, 212 or 101, 102, 213.

312. Public Finance.**3 cr.**

A study of the organization and management of government revenues and expenditures with emphasis on American practices and policies of the various levels of government. Welfare economics and benefit cost analysis receive heavy consideration. Prerequisites: 211, 212 or 101, 102, 213.

- 402. Comparative Economic Systems. 3 cr.**
A comparative study of capitalism, socialism, communism and other economic systems with emphasis on analysis rather than mere description of the economics of various countries. Prerequisites: 211, 212 or 101, 102.
- 403. Urban Economics. 3 cr.**
Urban economics is intended to afford an understanding of how the urban economy works, of the forces which affect the level, composition, and distribution of the output of the urban economy, and of the economic issues behind current urban problems. The course analyzes the processes, stages and determinants of urban economic growth and development. Urban economics focuses on the problems and policy in the urban economy; income inequality, manpower, local public finance, housing and land use patterns, and transportation. A particular emphasis of the course is to provide the student with the theoretical tools and show their application to the dynamic, complex urban economy. Prerequisites: 211, 212 or 101, 102.
- 405. International Economics. 3 cr.**
This course is an introduction to international trade theory and the principles of international monetary economics as well as foreign trade policies. Topics to be discussed include: the classical and neo-classical theory of comparative advantage, foreign exchange markets and balance of payments, adjustment mechanisms, analysis of the consequences of trade regulation and international liquidity problems. Prerequisites: 211, 212 or 101, 102, 213.
- 406. International Business. 3 cr.**
The course is offered by the Department of Commerce.
- 413. Labor Economics. 3 cr.**
Analysis of the principles for wage and employment determination in contemporary American economy under non-union conditions as well as under collective bargaining. The institutional development underlying labor supply and demand is studied with direct emphasis on its impact on employment and production, on the general wage-level and on wage differentials, on the distribution of national income and on general social welfare. The course also includes a comparative study of problems in labor economics in American and other democratic countries. Prerequisites: 211, 212 or 101, 102.
- 417. History of Economic Thought. 3 cr.**
Shows the development of economic thought from the Age of Mercantilism to 1890. Major emphasis is placed upon the writings of Mun, Petty, Quesnay, Smith, Ricardo, Malthus, Marx, Jevons, and the Austrian School. It offers a study of the fundamental concepts of the writers and the influence of institutional conditions upon their philosophy. Major emphasis is placed upon value and distribution theory as it developed. Prerequisites: 211, 212 or 101, 102, 213.
- 418. Modern Economic Theory. 3 cr.**
A brief review of classical tradition emphasizing Smith, Ricardo, and Mill, and Marxian socialism showing their influence upon the evolution of Twentieth Century economic theory. Emphasis is placed primarily upon the writings of Marshall, Schumpeter, and Keynes, applying their theories to the problems of contemporary economic policy. Special emphasis is given to economic growth and development and the essentials of welfare economics in today's society. Prerequisites: 211, 212 or 101, 102, 213.
- 419. Business Cycles and Forecasting. 3 cr.**
This course is designed to study the process of economic change. Analyses of Seasonal,

Cyclical, and Secular movements will be undertaken. Theoretical and empirical aspects will be covered. Forecasting techniques will also be studied. Prerequisite: 301.

420. Business and Public Policy. 3 cr.

A study of the regulatory techniques used by government to influence and modify business behavior. This course also includes an analysis of market structure, conduct and performance considerations pertaining to the firm and the industry. Emphasis is given to the anti-trust laws and special regulatory problems. Prerequisites: 211, 212 or 101, 102.

421. Current Economic Issues. 3 cr.

A seminar-like discussion of the state of the nation's economy and its current problems on the basis of critical examination of professional journal articles and economic reports by official and private sources (such as the President's Council of Economic Advisers). The purpose of the course is to begin developing in the graduating senior the ability to coordinate and apply the analytical knowledge he has acquired during his undergraduate study of economics and related fields of social science and business administration. Prerequisites: 211, 212 or 101, 102.

422. Monetary Theory and Policy. 3 cr.

This course presents the chief theoretical contributions on money. The policy implications of these theories, past and present, will be emphasized. Concentration will center upon policy proposals and controversy in the monetary field since World War II. The theories and contributions of Wicksell, Fisher, J. M. Clark, Keynes, Robertson and Modigliani, among others, are reviewed. The role of the interest rate is reviewed along with wage-price controversies, international gold flows, and the relationships between fiscal and monetary policies. Prerequisite: 301.

423. Theory of Economic Development. 3 cr.

The course is designed to acquaint students with the area of economic development. The subject matter of this course conveniently divides itself into five major categories—the nature of development and problems of measurement, theories of development, factors and forces affecting economic growth, different approaches to a higher standard of living, and problems of domestic and international stability. Approach to this course encompasses detailed study as well as strong emphasis on theoretical and critical analysis. Prerequisite: 301.

424. Problems, Policies and Case Studies in Economic Development. 3 cr.

This course is a continuation of the first semester course in economic development. An attempt is made in this semester to apply the tools, techniques, and theories of development to selected regions and countries of the world. The course is divided into four broad areas—the nature and problems of the case study method, the nature of the socio-economic structure and its impact on development, problems of measurement and of comparison, and the changing role of the basic factors of production. Considerable time will be devoted to a critical study of the actual policy measures adopted for development by selected countries. Prerequisite: 423.

451. Seminar in Economics. 3 cr.

The purpose of the seminar is to provide a vehicle for the advanced student to investigate separate subject areas in the field of Economic Theory. The intention is to provide a sound basis for further study at the graduate level. Seminar procedure will stress written and oral reports. Prerequisites: 301, 302 and permission of the instructor.

Department of English

Chairman: James P. Beymer, J.D., M.A.

The chief purpose of the English program is to develop the student's powers to think critically about his life. To this end the Department's curriculum unites intensive and critical reading in a broad range of our literary heritage with close attention to the presentation of ideas in writing. Attention is also given to oral expression of ideas by means of dialogue between professor and student. Not only is the degree in English an excellent preparation for Law School and for graduate work in English, Education, and Library Science, but it also provides the liberal preparation which is sought by the business world generally for such areas as personnel, advertising, and management.

REQUIREMENTS FOR THE MAJOR

The major is an individually-designed program of 24 hours of literature, writing, and linguistics above the 100 level. Each English major, with the close advice and approval of a member of the English faculty, designs a program to fit his background, interests, and career objectives.

REQUIREMENTS FOR THE MINOR

The minor consists of a minimum of 12 credit hours beyond the freshman level of which at least six must be taken at the 300 and 400 level.

There are four separate emphases that the student may follow:

1. *English Literature:* English 201, 202 and six hours in upper division English Literature, courses 407 to 464.
2. *American Literature:* English 205, 206 and six hours in upper division American Literature, courses 471 to 479.
3. *Writing:* English 203 and nine hours in Writing Workshops, courses 380 to 383.
4. *Literary Genre:* English 207, 208, or 209 with nine hours of upper division work in the corresponding genre (fiction, poetry, or drama) from the 300 and 400 offerings in English and American Literature.

Prerequisite for all courses 200 or above is 101, 102 or the equivalent. The English Department further advises that two 200 level courses should have been taken before the student attempts any 300 or 400 level English course (except 307 and 308).

HONORS PROGRAM

Students who score 625 or better on the College Entrance Examination Board verbal test may be invited to enroll in English Composition Honors, 103.

The Sophomore Honors section of English 212 is open to: students who successfully complete the freshman Honors course (103) with a grade of A or B; by

invitation to students who have College Entrance Examination Board scores of at least 550 (achievement) and 625 (verbal) and who bypass English 102 by virtue of an Advanced Placement Test score of four or better; or who display exceptional ability in English 102 and are recommended by their instructors.

Students who complete the Sophomore Honors sequence (English 212, 213), and become English majors are entitled to enroll in one Honors seminar (300) each semester of their Junior year.

- 101, 102. English Composition.** **3 cr. each**
Practice in effective writing. Review of principles of grammar and rhetoric; introduction to literary types and forms. 101 is prerequisite to 102.
- 103. English Composition Honors.** **3 cr.**
An honors counterpart to English 102. Composition and introduction to literary types and forms. Participation by invitation only.
- 201, 202. English Literature Survey.** **3 cr. each**
Representative masterpieces of English literature in their literary and historical contexts.
- 203. Advanced Writing.** **3 cr.**
The course is designed to build upon writing skills learned in Freshman Composition and centers chiefly on development of style and accuracy. Enrollment by instructor's permission only.
- 205. American Literature Survey I—Beginning to Civil War.** **3 cr.**
Representative selections from major American authors treated in both their literary and their historical contexts.
- 206. American Literature Survey II—After Civil War.** **3 cr.**
Representative selections from major American authors treated in both their literary and their historical contexts.
- 207. The Novel.** **3 cr.**
An introduction to various types of American and British novels and the methods of discussing fiction.
- 208. Poetry.** **3 cr.**
Appreciation of British and American poetry; critical analysis of traditional and experimental poetic form; consideration of philosophical and social concerns of poetry.
- 209. Drama.** **3 cr.**
An historical survey of major dramatic forms through a selection of representative works by major playwrights from the classical tradition of Greece and Rome to the Theatre of the Absurd.
- 210, 211. Readings in World Literature I, II.** **3 cr. each**
A survey of major literary works of the Western world from Homer to Cervantes (210) and from Moliere to Camus (211) with emphasis on continental traditions. The course explores both the thematic preoccupation of Western writers and the development and evolution of literary forms.
- 212, 213. English Literature Honors.** **3 cr. each**
Honors counterparts to English 201, 202. Major British writers from Chaucer to Eliot. Participation by invitation only.

- 300. Honors Seminar.** 3 cr.
(Special areas treated in these seminars will vary and will be designated in the schedule of courses each semester. Enrollment in the Honors Seminar is by invitation of the Honors Committee of the Department of English.)
- 307. The English Language.** 3 cr.
An introduction to linguistic analysis with primary emphasis on the history of the structure of English from old to modern English.
- 308. Applied Linguistics.** 3 cr.
Practical uses of structural linguistics in the teaching of composition and literature.
- 370, 371, 372, 373, 374, 375, and 376. Special Studies in English.** 3 cr. each
Two or three courses in this sequence are offered every semester by the English Department to meet the current interests of both the students and the faculty. Examples of courses regularly offered are *Science Fiction; Literature, Myth, and the Modern World; The English Bible as Literature; Comparative Literature; The Film as Literature.*
- 380, 381, 382, and 383. Writing Workshops.** 3 cr. each
One or more courses in this sequence are offered each semester in a workshop format designed to develop students' creative and/or technical writing skills. Examples of courses regularly offered are: *Poetry Workshop, Drama Workshop, Fiction Workshop, Writing for Business and Industry.* Admission by instructor's permission only.

The remainder of the English courses are divided into areas of emphasis. During a four-semester period, each course from each area will be offered at least once.

MEDIEVAL STUDIES

- 407. Medieval Genre.** 3 cr.
An approach to the ideas and attitudes of the medieval period by studying one of its dominant genres such as the romance, the drama, the lyric, etc.
- 408. Introduction to Medieval Literature.** 3 cr.
Readings and analysis of Medieval French, German, Old Icelandic, Old and Middle English Literature, in modern English.
- 409. Chaucer.** 3 cr.
A study of *The Canterbury Tales* and minor poems.

RENAISSANCE STUDIES

- 413. Sixteenth Century English Literature.** 3 cr.
Survey including non-Shakespearean drama, Sidney, Spenser, Shakespeare, Marlowe and minor figures.
- 414. Seventeenth Century English Literature.** 3 cr.
A survey of drama, prose and verse to 1660.
- 415. Milton.** 3 cr.
A survey of Milton and his times. A close scrutiny of the minor poems, and *Paradise Lost* and *Samson Agonistes*.
- 416. Renaissance Major Figure(s).** 3 cr.
A study of Renaissance thought and aesthetic in the works of one or more of its great writers: Spenser, Sidney, Donne, Jonson, etc.

417. Renaissance Genre.**3 cr.**

An approach to the ideas and attitudes of the Renaissance through one of its dominant genres: the lyric, the epic, the drama, etc.

SHAKESPEARE STUDIES**431. Shakespeare and His Contemporaries—Comedies.****3 cr.**

A study of selected Shakespearean comedies compared and contrasted with the form and content of the work of other Elizabethan and Jacobean comic dramatists. Specific works to be selected by the instructor.

432. Shakespeare and His Contemporaries—Tragedies.**3 cr.**

A study of selected Shakespearean tragedies examined in the perspective of tragic forms and themes as developed in the works of other Elizabethan and Jacobean playwrights. Specific works to be selected by the instructor.

433. Shakespeare I**3 cr.**

Comedies and romances.

434. Shakespeare II.**3 cr.**

Tragedies and histories.

435. Shakespeare and the critics.**3 cr.**

An intensive investigation of one or more of Shakespeare's plays designed to reflect how various approaches in its critical history have provided new insights into Shakespearean drama through the development of multiple perspectives. Specific works to be selected by the instructor.

EIGHTEENTH CENTURY STUDIES**441. English Classicism.****3 cr.**

Developments of neo-classical literature from the Restoration to the death of Pope. Primary attention given to Dryden, Swift and Pope.

442. Late Eighteenth Century English Literature.**3 cr.**

Johnson and his circle, the development of the novel, the aesthetic movement.

443. Eighteenth Century Major Figure(s).**3 cr.**

A study of Eighteenth Century thought and aesthetic in the works of one or more of its great writers: Dryden, Swift, Pope, Johnson, Blake, etc.

444. Eighteenth Century Genre.**3 cr.**

An approach to the ideas and attitudes of the Eighteenth Century through one of its dominant genres: the drama, the novel, the essay, etc.

NINETEENTH CENTURY STUDIES**451. English Romantic Literature.****3 cr.**

A study of the aesthetic, moral, political, and literary aspects of English romanticism approached through the writings of Wordsworth, Coleridge, Byron, Shelley, Keats.

452. Victorian Literature.**3 cr.**

A study of the poetry of Tennyson, Browning, Arnold and the prose of Arnold, Carlyle and Ruskin. Attention also given to the poetry of Morris, Rossetti and Fitzgerald.

- 453. Nineteenth Century Major Figure(s).** **3 cr.**
A study of Nineteenth Century thought and aesthetic in the works of one or more of its great writers: Wordsworth, Tennyson, Browning, Dickens, Hardy, etc.
- 456. Nineteenth Century Genre.** **3 cr.**
An approach to the ideas and attitudes of the Nineteenth Century through one of its dominant genres: poetry, the novel, the essay, etc.

TWENTIETH CENTURY STUDIES

- 461. The Early Twentieth Century.** **3 cr.**
Selective study of authors representing the major literary types and trends from about 1890 to 1930: Hardy, Moore, Butler, Conrad, Yeats, Hopkins, Joyce and Eliot.
- 462. Contemporary Literature.** **3 cr.**
Major literary types and trends since about 1930: Woolf, Waugh, Greene, Auden, Spender, Thomas, Golding and others.
- 463. Twentieth Century Major Figure(s).** **3 cr.**
A study of Twentieth Century thought and aesthetic in the works of one or more of its great writers: Yeats, Joyce, Eliot, etc.
- 464. Twentieth Century Genre.** **3 cr.**
An approach to the ideas and attitudes of the Twentieth Century through one of its dominant genres: poetry, the novel, the drama, etc.

AMERICAN STUDIES

- 471. Early American Literature.** **3 cr.**
A study of the literature of America's Colonial and Federalist periods, emphasizing the political and belletristic writings of an emerging nation.
- 472. American Romanticism.** **3 cr.**
A study of the Romantic movement in America with emphasis on Emerson, Thoreau, and Poe.
- 473. American Realism.** **3 cr.**
The rise of realistic fiction subsequent to the Civil War through the end of the century, emphasis on Twain, James and Howells.
- 474. Modern American Literature.** **3 cr.**
A study of American prose and poetry from the end of World War I to the present, including Frost, Fitzgerald, Hemingway, Faulkner, Bellow, etc.
- 475. American Literature Genre.** **3 cr.**
A study of American ideas and attitudes through the development of one of the dominant genres: the lyric, the novel, the short story, etc.
- 476. American Literature Major Figures(s).** **3 cr.**
A study of some of the major American writers demonstrating the scope of their contribution to American letters; such writers as Twain, James, Poe, Faulkner, Hemingway, etc.
- 477. American Literature: Special Studies.** **3 cr.**
A course designed to reflect particular current interests of faculty and students alike. Topics can be drawn from a wide range of areas such as historical background, aesthetics, theme and motif.

Fine Arts

Coordinator: Mrs. Patricia S. Ingram

Survey and period courses in the history of western art are offered by the Art Division of the Classics Department to introduce the concepts of art history to those who wish to extend their visual perimeter and to understand the role of the visual arts in Western culture. Qualified students are advised to take collateral courses in classics, history, philosophy, and psychology, and additional upper division art history courses offered at member colleges of the Pittsburgh Council on Higher Education. In addition to personal enrichment and heightened awareness of man's will to create visual forms, the study of art history can lead to careers in teaching, publishing, museology, historic preservation, and urban redevelopment.

REQUIREMENTS FOR THE MINOR

The minor consists of 12 credits of 300- and 400-level courses. The prerequisites are six credits of introductory and survey courses at the 100- and 200-level or their adjudged equivalent. Areas of concentration include Ancient, American, and Modern art.

- 101. Introduction to the Visual Arts. 3 cr.**
A study of the techniques and styles of architecture, sculpture, painting, and the graphic arts in western society, with an emphasis upon increasing the student's comprehension of our visually oriented culture. Recommended prerequisite for all upper division art history courses.
- 102. Introduction to Modern Art. 3 cr.**
An attempt to render accessible to the spectator the realities formulated by the artists of the last two decades. Formal analysis of the art object and examination of the motivational forces which shaped its creation lead to an overall view of the structural framework of twentieth century painting and sculpture. (Offered in alternate years)
- 201. History of Art: Ancient to Gothic 3 cr.**
A chronologically oriented, detailed presentation of the history of Western art. This survey deals with Near Eastern, Greek, Roman, Early Christian and Medieval art.
- 202. History of Art: Renaissance to Modern. 3 cr.**
A continuation of 201. Surveys Renaissance, Baroque and Modern art in Western Europe.
- 203. French Art. 3 cr.**
A survey which discusses ideas, schools, and styles in the history of French Art from the Roman occupation to the present. Areas of emphasis are Carolingian, Romanesque, Gothic, Renaissance, Rococo, and Modern art. (Offered in alternate years)
- 204. Spanish Art. 3 cr.**
A survey which considers the divergent factors which have shaped the Spanish artistic orientation from pre-historic times to the present. Areas of emphasis are Hispano-Roman, Visigothic, Mozarabic, Medieval, Plateresque, Baroque, and Modern Art.

- 301. Greek Art.** 3 cr.
A study of the architecture, sculpture, vase painting, and minor arts of the Greek world from Minoan to Hellenistic times. The student is introduced to the extensive vocabulary of Greek art which has been a continuing formative force in western art. (Offered in alternative years)
- 302. Roman Art.** 3 cr.
An introduction to Roman innovations in architecture, sculpture, and painting. The background of Roman art in Etruscan, Greek, and Egyptian civilizations is investigated, and the impact of Roman art in formulating Christian Art, Renaissance Art and Neo-Classicism is analyzed. (Offered in alternate years)
- 312. Late Medieval Art.** 3 cr.
Western European Art from the 11th to the 14th century. Focus is upon the development of stone vaulting systems, monumental architectural sculpture, stained glass, fresco and panel painting, and illuminated manuscripts in England, France, Italy, and Germany. (Offered in alternate years)
- 321. 15th Century Renaissance Art.** 3 cr.
An investigation of the Renaissance spirit of the 15th century. Concentration is upon comparisons of Northern and Southern attitudes to man, nature, and social structure, and to materials, techniques, pictorial representation, and iconography. (Offered in alternate years)
- 331. Art of the 19th Century.** 3 cr.
A survey of the visual arts in the 19th century. The visual arts not only reflect the dramatic changes in the artists' use of form, color, line, texture and light, but also emphasize the changing political, religious, and social values in society.
- 332. Art of the 20th Century.** 3 cr.
A chronological study of 20th century painting and sculpture which "looks beyond visual perception and tries to find the essence and meaning of reality." From cubism to conceptual art, from Picasso to Pollock and Pop, this course offers a thorough exploration of the visual arts of the 20th Century.
- 341. American Painting and Sculpture.** 3 cr.
An examination of the forms created by American painters and sculptors from the early 17th through the late 20th century. A special class intent involves arriving at a clear understanding of Americans' concept of reality during these years, particularly in the 20th century.
- 342. American Architecture.** 3 cr.
Construction, style, building types, and concepts of city planning in American architecture from the 17th century to the present. Field trips to important monuments in the Pittsburgh area, including Falling Water, are scheduled.
- 431. Selected Readings: Variable Topics.** 3 cr.
In-depth research, using the resources of Pittsburgh area libraries and of source material relevant to the history of Western art. Weekly seminars are conducted, trips to local and out-of-town museums are arranged, and individual research is programmed. Prerequisite: Permission of instructor.
- 442. Tri-State Architecture.** 3 cr.
Weekly seminars on detailed aspects of American Architecture, particularly those pertinent to Western Pennsylvania, Eastern Ohio and near-by West Virginia. Walking tours

in Pittsburgh, automobile tours of the region, and independent research are scheduled. Prerequisite: American Architecture 342 or permission of instructor. (Offered in alternate years)

Department of History

Chairman: Samuel J. Astorino, Ph.D.

The Department of History offers a program devoted to the study of mankind in diverse cultural settings through time. A large number of courses are taught by a faculty reflecting a variety of philosophical and methodological outlooks. Apart from the fact that the program fully meets the needs of students intending to pursue graduate work in historical studies, the history major will be well prepared for careers in law, business, or government service. Most importantly, the discipline of history provides an excellent synthesis of the liberal-arts education since it effectively joins together the humanities and the social sciences.

REQUIREMENTS FOR THE MAJOR

At least 24 credits in addition to 111, 112. Of these 24 credits, at least six credits must be taken in American and six credits in European history; at least six credits from the sophomore survey courses, 211, 212, 221, 222, 231, 232 (twelve credits from this level are recommended); and three credits of an undergraduate historiography course, 481, 483, or 484.

The stated requirements aim to provide the student with a structured program of learning within which considerable flexibility is encouraged. The Man in History course (111, 112) acquaints the student with the basic themes of world history. A variety of second-year survey courses supply essential knowledge of the major periods of European and American history. Upper and advanced-level courses provide intensive studies of historical methodology, of the major cultural areas of the world, and of significant themes in history.

A maximum of 12 transfer credits in history can be applied to the major requirements.

REQUIREMENTS FOR THE MINOR

Students who wish to minor in history should consult with the department's undergraduate advisor. The student is required to take 12 hours beyond 111, 112, including either 221, 222 or 231, 232; the remaining six credits should be scheduled with the advice of the department advisor.

INTRODUCTORY SURVEYS

- 111, 112. Man in History.** **3 cr. each**
A survey of world history covering important aspects of human evolution. The first semester deals with prehistory and the major civilizations. The second semester concentrates on major trends significant to the development of the contemporary world.
- 211. The Ancient World** **3 cr.**
A survey of the ancient cultures and their contribution to civilization with emphasis on the Greeks and the Romans.
- 212. Europe in the Feudal Age.** **3 cr.**
The world of the Middle Ages—a survey of medieval men's political, social, and cultural activities.
- 221. Europe from Renaissance to Revolution.** **3 cr.**
The history of Europe from the fourteenth through the eighteenth centuries—the era of transition and change from the medieval to the modern world.
- 222. Europe: Industrialism and the Masses.** **3 cr.**
A historical analysis of Europe in the last two centuries, with particular attention to the relationship between technological and social change and its impact on politics and culture.
- 231. Development of the U.S. to 1877.** **3 cr.**
The historical development of American institutions, ideals, and society from earliest times to 1877.
- 232. Development of the U.S. since 1877.** **3 cr.**
The historical development of American institutions, ideals, and society since 1877.

TOPICAL AND AREA SURVEYS

- 253. The Middle East From Muhammed to Napulean.** **3 cr.**
A historical survey of the Near east from the rise of Islam to the decline of the Ottoman state, with particular attention to political, social, and cultural trends.
- 254. The History of the Modern Middle East.** **3 cr.**
A study of the modern Near East with concentration upon the conflict between imperialism and nationalism, traditionalism and western influences, in the area.
- 255, 256. History of Asia.** **3 cr. each**
A survey of Asian civilization from ancient times to the present day; western colonialism; the rise of the nationalist movement; and the establishment of modern states.
- 257, 258. Russian History** **3 cr. each**
Development of society and state in Russia from their origins to the twentieth century.
- 259, 260. East-Central Europe.** **3 cr. each**
The medieval and modern history of the small nations situated between Russia and Germany on the east and west, and the Baltic and Mediterranean Seas on the north and the south.
- 261, 262. Latin America.** **3 cr. each**
A study of the general history of Latin America from the Age of Discovery to the pre-

sent. Emphasis is given to political and economic factors in the colonial and national periods.

263. The Colonial Period—Western Hemisphere. 3 cr.

A comparative examination of the economic, social, and political factors influencing European expansion to 1880.

265. England before 1715. 3 cr.

The foundations of England, emphasizing the origins of the common law, the rise of parliament, the development of English society, and England's contribution to western thought.

266. Modern Britain. 3 cr.

A study of the first industrial nation, with special attention to the achievement of constitutional monarchy, the social and economic problems of industrialization, the nature of British imperialism, and the problems faced in the 20th century.

267. Canada. 3 cr.

An introduction to Canadian history, with particular attention to the years from 1763 to the present, and to Canadian-American relations and contemporary Canada.

269, 270. China. 3 cr. each

A survey of social, economic, political, and cultural changes before and after the establishment of the People's Republic of China.

274. History of Christianity I. 3 cr.

The growth of Christianity from the first century to the Reformation with emphasis on its major conflicts, internal and external.

275. History of Christianity II. 3 cr.

Catholic and Protestant traditions, transformations, crises, revolutions, reforms, and reconciliations in an age of growing secularization: 1500 to the present.

307, 308. History of Science 3 cr. each

A survey exploring the significance of scientific developments within the historical and social context of Western culture.

325. Greek History. 3 cr.

An examination of the development of Greek history and culture from earliest times up to the death of Alexander of Macedon.

326. Hellenistic History 3 cr.

A survey of Mediterranean history from the death of Alexander until the accession of Octavian and the establishment of the Roman principate.

337. Roman Imperial History. 3 cr.

A study of the consolidation and dissolution of the Roman imperial structure up to the death of Justinian in 565 B.C.

338. Ancient Indian History and Civilization. 3 cr.

An investigation of ancient Indian history, art and literature up to the time of the Muslim invasion.

AMERICAN POLITICAL AND DIPLOMATIC HISTORY

348. Modern American Military History. 3 cr.

A systematic study of modern U.S. wars from 1914 to the present. The course focuses on the political, social and economic conditions leading to each major conflict; evaluates in

general terms the conduct of military operations, and assesses the impact of the conflict upon the Armed Forces and the Nation. Special emphasis is placed upon the role of the U.S. in world affairs, modernization of the Armed Forces, military-business relationships, raising and maintaining a military establishment, and civilian-military relationships.

- 356. Diplomatic History of the United States.** **3 cr.**
American involvement in world affairs, especially since 1895, and the formulation of U.S. foreign policy.
- 357. History of the American Presidency.** **3 cr.**
Primarily an investigation and evaluation—personal, political, contemporary, and historical—of each president with some attention to the growth of the office.
- 358. Civil War and Reconstruction.** **3 cr.**
An intensive study of the American experience before and after the War for the Union.
- 359. (459) The American Political Tradition.** **3 cr.**
A survey of the history of American Political thought and its relationship to political practice.
- 360. Constitutional History of the United States.** **3 cr.**
An analysis of the Supreme Court and constitutional development, stressing the major controversies in the field.
- 361, 362. History of the United States' Political Parties.** **3 cr. each**
A detailed examination and analysis of the origins, leadership, and operation of the major political parties in the U.S.

INTELLECTUAL AND CULTURAL HISTORY

- 363. Cultural History of Medieval Europe.** **3 cr.**
The development of the body of literature, secular and religious, from the decline of the Roman Empire to the Renaissance.
- 365. The Origins of the Modern Mind.** **3 cr.**
Intellectual changes between 1300 and 1800 that set the stage for the modern temper.
- 366. The Modern Mind.** **3 cr.**
The major ideological tendencies of modern European thought and their connection to society and politics, and to the major philosophic and scientific currents of the nineteenth and twentieth centuries.
- 367. The Impact of Science on Society.** **3 cr.**
The economic, social and cultural consequences of the rise of modern science.
- 368-369. The American Mind I and II.** **3 cr. each**
The origins, development, and contemporary modes of American thought, including major "climates of opinion," diverse movements, and selected scientific, political, religious, social, and artistic topics.

EUROPEAN POLITICAL AND DIPLOMATIC HISTORY

- 373, 374. Diplomatic History of the Far East.** **3 cr. each**
Western imperialism in Asia; rise of Asian nationalism, analysis of international problems in current tension areas.

- 377. European Empire in the Nineteenth Century.** 3 cr.
Examines the growth of the great colonial empires in the nineteenth century and their decline before the forces of nationalism.
- 378. European Diplomatic History, 1870-1960.** 3 cr.
A study of European international politics since 1870, with emphasis upon the major developments, their origins and historic significance, and the evolving styles of diplomacy.
- 379. Revolutionary Movements in Modern European History.** 3 cr.
An analysis of the major political and social revolutions in Europe since 1789, the nature of the revolutionary phenomenon, and the inevitable counter-revolutionary trend.
- 380. European Fascism.** 3 cr.
An intensive study of the major fascist movements and regimes of the twentieth century in light of the political, economic, social, intellectual, and psychological tensions which produced them.

SOCIAL HISTORY

- 385. Women in History.** 3 cr.
The too often neglected history of one-half of the human race, with special emphasis on the life experience of women in past ages.
- 387. Frontier, Environment, and Utopia.** 3 cr.
A historical view of man's attempts to create new societies, concentrating upon ecological issues, world frontier experiences, and utopian or futurist ventures.
- 389. Social History of Modern Europe.** 3 cr.
An examination of major demographic, economic, and social trends in modern European history.
- 391. Social History of Russia.** 3 cr.
The study of the development, role, and inter-relations of the social classes in Russia and the Soviet Union, and in East Central and Southeastern Europe.
- 392. The East European Ethnic (Immigrant) Experience.** 3 cr.
The examination of the social and economic conditions and cultural milieu that the various waves of East European immigrants left behind in Europe and found in America, and the study of their inter-ethnic relationships and adjustment to American society.
- 393. Economic History of the United States to 1865.** 3 cr.
Investigates the economic factors in the development of the U.S. and their impact on social and political issues.
- 394. United States' Labor History.** 3 cr.
Concentrates chiefly on the relations between worker and employer from the early craftsmen to the industrial union member.
- 395. Urban History: United States.** 3 cr.
The rise of urban America, from the colonial period to World War I.
- 396. History of American Immigration since 1880.** 3 cr.
Focuses on the nature and problems of the more recent immigrant, his cultural contributions, the effects of selectivity and changing native attitudes.

- 397. Reform in Modern America.** 3 cr.
A study of political, economic, and social reform movements in the United States since the late nineteenth century.
- 398. Economic History of the U.S. Since 1865.** 3 cr.
Investigates the economic development of the United States after the Civil War, emphasizing its impact on social and political issues as background for current economic problems.
- 399. The Search for Identity—U.S. Since 1945.** 3 cr.
A discussion of selected contemporary issues, foreign and domestic, which illustrate the identity crisis in the U.S.

HISTORIOGRAPHY

- 481. The Modern Historian.** 3 cr.
The development of modern historical thinking and scholarship as it is related to the major intellectual and social currents of modern times.
- 483. Special Problems in European History.** 3 cr.
Emphasizes the conflict among historians over interpretations of significant events in European history.
- 484. Special Problems in American History.** 3 cr.
Emphasizes the conflict among historians over interpretations of significant events in American history.

Department of Journalism

Chairman: C.S. McCarthy, M.Ed.

The Department of Journalism tries to integrate the liberal education of a student by emphasizing how a professional education for a career in the mass media relies on the liberal arts tradition. The journalism curriculum concentrates upon the development of communicative skills for creative and responsible positions in such areas of mass communication as advertising, broadcasting, newspapers, public relations, magazines and specialized publications.

REQUIREMENTS FOR THE MAJOR

Twenty-seven semester hours are required for a major. Required courses are: 167, 267, 268, 367, 369, 376 and 466 or 468 or 470 or 476.

REQUIREMENTS FOR THE MINOR

Eighteen semester hours credit are required for a minor. Credits must include: 167, 267, 268, and nine other journalism credits approved by the head of the Department of Journalism. Minors do not qualify for the Department's Professional Internship program.

- 167. Introduction to Mass Communications.** 3 cr.
An introduction to the role, principles, and responsibilities of newspapers, broadcasting, magazines, advertising and public relations. Course open to non-majors. (Offered both semesters)
- 267. Basic Reporting and Writing I.** 3 cr.
Fundamentals of news reporting and writing. Applied practice in laboratory sections.
- 268. Basic Reporting and Writing II.** 3 cr.
Advanced writing of the more complex types of news stories. Applied practice in laboratory sections. Two hours lecture. Prerequisite: 267.
- 367. Radio-Television: Principles and Writing.** 3 cr.
A lecture-laboratory course in the study and application of writing principles and practices for radio and television. Two hours lecture, two hours laboratory. Open to non-majors. Prerequisites: 267, 268, or approval of Department.
- 369. Advertising: Principles and Writing.** 3 cr.
A lecture-laboratory course in the study and application of writing principles and practices for advertising. Two hours lecture; two hours laboratory. Open to non-majors. Prerequisites: 267, 268, or approval of Department.
- 370. Developing the Broadcast Program.** 3 cr.
Creation, development and presentation of the radio and television program including documentaries, panels, dramatic and non-dramatic programs. Theory and practice of direction. Two hours lecture; two hours laboratory. Prerequisite: 367 or approval of Department.
- 371. Mass Communications and Public Opinion.** 3 cr.
A study of the nature of public opinion and the mass communications process, effects of propaganda, and barriers to effective communication. Open to Juniors and Seniors.
- 372. Communication Law.** 3 cr.
A study of the legal rights, responsibilities and ethics of the mass media. Open to Juniors and Seniors.
- 375. Editing.** 3 cr.
A lecture-laboratory course in editing and presenting the written word for the mass media. Prerequisite: 267 or approval of Department.
- 376. History of the Mass Media.** 3 cr.
Concentrated lecture-discussion course in an historical context of major social influences affecting American Journalism from the colonial press period to contemporary society. Open to Juniors and Seniors.
- 378. Photography for Journalists.** 3 cr.
A lecture-laboratory course in the preparation and use of photography for publication. Fundamentals of camera work developing, printing, print evaluation and editorial uses of photography emphasized. Prerequisite: 267 or approval of Department.
- 380. Specialized Publications.** 3 cr.
A study of association, business, industrial, professional and religious communications with emphasis on the internal and external publications in industry. Prerequisites: 167, 267, 268, 375.

- 405. Advanced Writing for Journalism.** 3 cr.
A lecture-laboratory course in gathering and interpretive writing of news of urban affairs. Analysis of major political, economic, and social developments that have local news interest and significance. Two hours lecture; two hours laboratory. Prerequisites: 267, 268.
- 409. Advanced Writing for Advertising.** 3 cr.
A lecture-laboratory course in copywriting and design for advertising. Two hours lecture; two hours laboratory. Prerequisite: 369.
- 411. Advanced Writing for Magazines.** 3 cr.
A lecture-laboratory course in writing for the general and specialized magazine. Two hours lecture; two hours laboratory. Open to Juniors and Seniors.
- 413. Advanced Writing for Radio and Television.** 3 cr.
A lecture-laboratory course in writing for Radio and Television. Two hours lecture, two hours laboratory. Prerequisite: 367.
- 420. International Communications.** 3 cr.
A study of world news systems and an analysis of their roles as instruments of world understanding. Open to Juniors and Seniors.
- 430. Public Relations: Principles and Writing.** 3 cr.
Study of the principles and concepts of public relations, needs, significance and influence. Analysis of various publics constituting the whole public. Case studies. Applications of principles in student research projects. Open to Juniors and Seniors.
- 441. Secondary School Communications.** 3 cr.
Function of publications and broadcasting in the secondary school. Role and responsibilities of school-press advisors. Teaching of Journalism on the high school level. Course is directed at students seeking a Pennsylvania teacher's certificate in communication with emphasis in high school journalism. Open to Juniors and Seniors. Prerequisites: 167, 267.
- 466. Professional Internship: Advertising.** 3 cr.
A supervised observation-experience program of study and assignment to an assigned advertising agency or industrial advertising department in conjunction with the American Association of Industrial Advertisers, Pittsburgh Chapter. Prerequisites: 167, 267, 268, 367, 369, 376, 409. (Offered both semesters)
- 468. Professional Internship: Broadcasting.** 3 cr.
A supervised observation-experience program of study and assignment to an assigned commercial/educational broadcasting station in the Pittsburgh area. Prerequisites: 167, 267, 268, 369, 370, 413. (Offered both semesters)
- 470. Professional Internship: Newspapers.** 3 cr.
A supervised observation-experience program of study and assignment to a member newspaper of the Pennsylvania Newspaper Publishers Association in Allegheny County. Prerequisites: 167, 267, 268, 367, 369, 375, 376, 405. (Offered both semesters)
- 476. Professional Internship: Public Relations.** 3 cr.
A supervised observation-experience program of study and assignments to an assigned public relations agency, association, industrial, or non-profit educational group in the Pittsburgh area. Prerequisites: 167, 267, 268, 367, 369, 375, 376, 380, 430. (Offered both semesters)

Department of Mathematics

Chairman: Robert G. McDermot, Ph.D.

The Department of Mathematics offers a sequence of modern courses which will (a) aid the student in developing his ability to think scientifically and form independent judgments; (b) provide the student with a breadth and depth of knowledge concerning not only manipulative skills but also fundamental and essential theory; (c) enable the student to use his knowledge in the formulation and solution of problems; and (d) give the student the necessary basis or foundation for the pursuit of graduate study or productive effort at the bachelor level.

REQUIREMENTS FOR THE MAJOR

BACHELOR OF ARTS DEGREE

A minimum of 32 semester hours is required. These must include 115, 116, 215, 216, 303, 415, 416; the remainder must be selected from courses numbered above 300. Exceptionally able seniors are encouraged to seek departmental approval to include 500 level mathematics courses listed in the graduate catalog.

BACHELOR OF SCIENCE DEGREE

A minimum of 32 semester hours is required. These must include 115, 116, 215, 216, 303, 415, 416; the remainder must be selected from courses numbered above 300. Exceptionally able seniors are encouraged to seek departmental approval to include 500 level mathematics courses listed in the graduate catalog.

Twenty hours of science courses is an extra-departmental requirement; this must include Physics 211, 212. The remaining courses may be selected from biology courses numbered 111 or higher, chemistry courses numbered 121 or higher, and physics courses numbered above 212.

REQUIREMENTS FOR THE MINOR

A minor must include 115 and 14 additional credits selected from courses numbered above 115 but not including 117; 116 must be included.

For science majors, Mathematics 215, 216, 315, 321 are recommended.

For economics and social science majors, Mathematics 222 or 308, 225 or 301, 306 are recommended.

101. Elementary Mathematics.

3 cr.

A remedial course in the fundamentals of algebra, including the solution of equations and inequalities. Not to be counted toward a major, minor or the mathematics/science area requirement.

103, 104. General Mathematics I, II.

3 cr. each

A modern course meeting the needs of non-science students in the College for a general knowledge of the fundamental concepts and processes of mathematics. Not counted toward a major or minor.

- 105. Basic Mathematics.** **4 cr.**
A modern course in college algebra and analytic trigonometry for those students who do not possess the prerequisites for 115. Not counted toward a major or minor.
- 107, 108. Introduction to Modern Mathematics I, II.** **3 cr. each**
This course is designed for elementary education students in the School of Education. Not to be counted toward a major, minor, or the mathematics/science area requirement.
- 115, 116, 215. Calculus I, II, III.** **4 cr. each**
A unified course in analytic geometry and calculus. Considers theory of limits, functions, differentiation, integration, series, geometry of space, functions of several variables, and multiple integration. Students will be introduced to Fortran programming. Prerequisites for 115: Two years of algebra, one year of plane geometry, and one-half year of trigonometry.
- 117. Fortran Programming.** **1 cr.**
A study of Fortran and Fortran programming. Credit will not be allowed for both this course and 115.
- 216. Ordinary Differential Equations.** **3 cr.**
The course includes solutions, existence of solutions, and applications of differential equations. Prerequisite: 215.
- 221. History of Mathematics.** **3 cr.**
This is a survey of the historical development of mathematics. Prerequisite: One year of College Mathematics, preferably including one semester of calculus. Not counted toward a major.
- 222. Basic Computer Science.** **3 cr.**
An introduction to programming electronic digital computers, operating systems and compilers. Machine language and an assembly language are presented and used to solve several problems. Prerequisite: One year of high school algebra. Not counted toward a major.
- 225. Fundamentals of Statistics.** **3 cr.**
A basic course in probability theory and descriptive and inferential statistics for non-majors. Prerequisite: High school algebra. Not counted toward a major.
- 301, 302. Introduction to Probability and Statistics I, II.** **3 cr. each**
A mathematical treatment of probability theory and mathematical statistics including probability distributions, random variables and their transformations, expectation, point and interval estimation, and sampling distributions. Prerequisite: 116 or equivalent.
- 303. Principles of Modern Algebra.** **3 cr.**
A study of basic properties of groups, rings, modules, and fields. Prerequisites: 115, 116.
- 306, 307. Linear Algebra I, II.** **3 cr. each**
A study of linear transformations and matrices. Prerequisites: 115, 116.
- 308. Numerical Analysis.** **3 cr.**
A computer oriented course in numerical analysis introducing elementary techniques for numerical solution of problems. A knowledge of Fortran or equivalent language is assumed. Prerequisite: 215.

- 311. Introduction to Number Theory.** 3 cr.
A discussion of divisibility, congruences, quadratic residues, diophantine equations and arithmetical functions. Prerequisite: Proficiency at 105 level.
- 315. Advanced Differential Equations.** 3 cr.
Principally theoretical, this course considers the methods of solutions as well as existence and uniqueness of solutions, applications, and partial differential equations. Prerequisite: 216.
- 321. Mathematical Concepts for Physics.** 3 cr.
A survey of the mathematical concepts used in undergraduate physics, especially quantum mechanics. Topics covered include vector analysis, matrix theory, complex function theory, Fourier series and calculus of variations. Prerequisite: 216.
- 401. Fundamentals of Geometry.** 3 cr.
The course considers topics in Euclidean and Non-Euclidean geometry, also synthetic, projective, and affine geometrics, and some topology. Prerequisite: 215.
- 403. Introduction to Point Set Topology.** 3 cr.
A survey of elementary topics including topological spaces, compactness, connectedness, convergence and separation axioms. Prerequisite: 215.
- 405. Introduction to Complex Variables.** 3 cr.
Topics include the plane of complex numbers, functions of a complex variable and integration in the complex plane. Prerequisite: 216.
- 415, 416. Advanced Calculus I and II.** 3 cr. each
A rigorous study of the calculus and its foundation. Prerequisite: 216.
- 431. Introduction to Biostatistics.** 3 cr.
Intended primarily for upper level pharmacy and biology students; acquaints the student with some of the common statistical techniques applied to research and data analysis in the life sciences.
- 491 to 499. Selected Topics in Mathematics.** 1-3 cr. each
This is an honors course. Topics selected in consultation with staff.

Department of Modern Languages and Literatures

Chairman: Reyes Carbonell, Ph.D.

Two "tracks" of language teaching on the elementary and intermediate level are offered in French, German, and Spanish, both of which satisfy college degree requirements. One of these emphasizes reading and the other reading, writing, speaking, and the aural comprehension. In the conversation and composition courses, the student's fluency in the active use of the language is strengthened. Subsequent courses stress primarily literary studies in which the student is systematically introduced to a survey of the literature and is given a working acquaintance with the culture of the groups whose language he is studying. He is also presented a choice of

courses dealing with specific works, authors, and auxiliary subjects.

Career opportunities for a student having a knowledge of foreign languages are in the fields of teaching, state employment, foreign service, and industry. United States business firms in Europe, Latin America, Asia, and Africa need personnel fluent in or at least conversant with appropriate foreign languages.

REQUIREMENTS FOR THE MAJOR

The department offers major programs in French, German, and Spanish, and non-major courses in Russian and Italian.

The major program in Modern Languages and Literatures consists of a minimum of 24 semester hours above the 200 level. Required courses are:

FRENCH—301, 302, 465, 466. Majors will discuss their courses with the Director of the Section.

GERMAN—301, 302, 463, 464. Majors will discuss their courses with the Director of the Section.

SPANISH—301, 302; 312 (or 314 or 316); 401, 402, 420; 451, 452. Additional courses open to qualified undergraduates are: 504, 505, 453, 454, 461, 462.

Courses taken out of progression will not carry credit. **Credit will not be given for both 201, 202 and 211, 212, which are intermediate level courses.** 302 is prerequisite to all 400 courses; 400 courses are conducted in the respective language.

On the elementary and intermediate levels, special sections are provided to foster work of greater range and depth by students whose interests and abilities make them eligible.

JUNIOR YEAR ABROAD. Majors are strongly encouraged to participate. Further information may be obtained at the Department Office.

REQUIREMENTS FOR THE MINOR

The minor program consists of a minimum of 12 semester hours above the 200 level.

351. Introduction to the Study of Language. **3 cr. each**

491. European Literature in Translation. **3 cr. each**

Translation taken from German, French, Spanish, Russian or a combination of those languages.

FRENCH

101, 102. Elementary French. **3 cr. each**

Fundamentals of oral and written French. Three hours lecture and one hour laboratory each week.

11, 112. Elementary French for Reading. **3 cr. each**

The course will stress basic grammar and structure for reading comprehension.

201, 202. Intermediate French. **3 cr. each**

Prerequisite: French 102 or equivalent. An intensified review and continuation of 101, 102.

- 211, 212. Intermediate French for Reading.** 3 cr. each
Prerequisite: French 102 or 112.
- 239, 240. Readings in Modern French Authors.** 3 cr. each
Selections from modern works of literature. Does not carry credit toward a major.
- 301, 302. French Conversation and Composition.** 3 cr. each
These two courses, or their equivalents, are prerequisites for all of the following courses.
- 312, 314, 316. Literature Workshop.** 3 cr. each
- 465, 466. Seminar in French Literature and Composition.** Var. cr.
Variable topics.

GERMAN—Paul Neumarkt, Ph.D., *Director*

- 101, 102. Elementary German.** 3 cr. each
Fundamentals of oral and written German. Three hours lecture and laboratory each week.
- 111, 112. Elementary German for Reading.** 3 cr. each
The course will stress basic grammar and structure for reading comprehension.
- 201, 202. Intermediate German.** 3 cr. each
Prerequisite: German 102 or equivalent. An intensified review and continuation of 101, 102.
- 211, 212. Intermediate German for Reading.** 3 cr. each
Prerequisite: German 102 or 112.
- 239, 240. Readings in Modern German Authors.** 3 cr. each
Prerequisite: German 202 or equivalent. Selections from modern works of literature.
- 249, 250. Readings in Scientific German.** 3 cr. each
Prerequisite: German 201 or three years of high school German. Designed for students in scientific and technical curriculums.
- 301, 302. Conversation Based on 19th Century Literature.** 3 cr. each
Prerequisite: German 202 or equivalent. This course is prerequisite to all courses above 400 and is required of all majors in German.
- 463, 464. Seminar in German Literature and Composition.** Var. cr.
Variable topics.

ITALIAN

- 101, 102. Elementary Italian.** 3 cr. each
Fundamentals of oral and written Italian. Three lecture hours and one hour laboratory each week.
- 111, 112. Elementary Italian for Reading.** 3 cr. each
The course will stress basic grammar and structure for reading comprehension.
- 201, 202. Intermediate Italian.** 3 cr. each
Prerequisite: Italian 102 or equivalent. An intensified review and continuation of Italian 101, 102.
- 211, 212. Intermediate Italian for Reading.** 3 cr. each
Prerequisite: Italian 102 or 112.

RUSSIAN

- 101, 102. Elementary Russian.** **3 cr. each**
 Fundamentals of oral and written Russian. Three hours lecture, one hour laboratory each week.
- 201, 202. Intermediate Russian.** **3 cr. each**
 Prerequisite: Russian 102 or equivalent. Intensified review and continuation of Russian 101, 102.
- 239, 240. Readings in Modern Russian Authors.** **3 cr. each**
 Prerequisites: Russian 202 or equivalent. Selections from modern works of literature. This course is given by arrangement only.
- 301, 302. Conversation Based on Russian Literature.** **3 cr. each**
- 401, 402. Survey of Russian Literature.** **3 cr. each**

SPANISH—Reyes Carbonell, Ph.D., *Director*

- 101, 102. Elementary Spanish.** **3 cr. each**
 Fundamentals of oral and written Spanish. Three hours lecture, one hour laboratory each week.
- 111, 112. Elementary Spanish for Reading.** **3 cr. each**
 The course will stress basic grammar and structure for reading comprehension.
- 201, 202. Intermediate Spanish.** **3 cr. each**
 Prerequisite: Spanish 102 or equivalent. An intensified continuation of Spanish 101 and 102. Course 202 or equivalent is prerequisite for all the following courses.
- 211, 212. Intermediate Spanish for Reading.** **3 cr. each**
 Prerequisite: Spanish 102 or 112.
- 239. Readings in Modern Spanish Authors.** **3 cr.**
- 240. Readings in Modern Spanish-American Authors.** **3 cr.**
- 301, 302. Spanish Conversation and Composition.** **3 cr. each**
 The course 302, or its equivalent, is a prerequisite to all courses above 400.
- 312 (314-316). Literature Workshop.** **3 cr.**
 Study of specific literary works or authors.
- 401, 402. Survey of Spanish Literature.** **3 cr. each**
- 420. El Quijote.** **3 cr.**
- 440. Directed Readings.** **Var. cr.**
 Reading of literary texts under close faculty supervision, for majors only, and only with permission of the Department.
- 451, 452. General Survey of Spanish Culture and History.** **3 cr. each**
- 453. Survey of Latin American Culture and History.** **3 cr.**
- 454. Trends in Latin American Literature.** **3 cr.**
- 461, 462. Senior Undergraduate Seminar.** **3 cr. each**
 Twentieth Century Spanish literature and Twentieth Century Spanish-American literature.

Department of Philosophy

Chairman: Andre Schuwer, Ph.D.

The program offered by the Department of Philosophy is designed to be a basic part of the student's liberal education. It is intended to introduce students to philosophical thinking, past and present, to provide a discipline for asking the basic questions of life and to help students begin relating their other academic subjects to one another and to human experience. The department is made up of professors who have different philosophical interests, and it also respects the right of the student to decide for himself or herself on all issues. It believes that intellectual dialogue about basic human concerns will help the student be better prepared to meet the needs of mankind today and in the future. In order to make this kind of dialogue possible, the courses are concerned both with the past history of ideas and with the present problems of man's individual and social existence.

REQUIREMENTS FOR THE MAJOR

The department requires its majors to take nine philosophy courses above the 100 level of which at least three have to be at the 300 history of philosophy level and at least two other courses have to be at the 400 thematic level.

REQUIREMENTS FOR THE MINORS

Four three-hour courses, other than the Introductory (100 level); at least two of the four courses must be taken from above the 200 level.

Suggestions for Minors

The following suggestions are offered as an indication of courses that might be especially pertinent to the respective areas of major concentration. However, students, in consultation with their advisor, are free to select any combination of courses either related or unrelated to their major subjects.

1. *Communications and Humanities Majors:* 201, 203, 204, 205, 209, any 300 level History of Philosophy courses, 406, 407, 408, 411, 414.
2. *Natural Sciences Majors:* 201, 205, 207, 304, 322, 404, 409.
3. *Social Sciences Majors:* 201, 203, 205, 206, 305, 322, 323, 404, 407, 408, 410, 411, 414.
4. *Theology Majors:* 201, 202, 203, 205, 208, 209, any 300 level History of Philosophy courses, 401, 402, 403, 408, 410, 411, 414.

The College philosophy requirement may be fulfilled by taking any of the courses listed. Course 101 or 111 is recommended as a first course in philosophy for all students.

Students who have questions about whether they are prepared well enough in philosophy to take an advanced course are encouraged to consult the professor who

is scheduled to teach the course that particular term.

Courses designed for majors are open to non-majors on consultation with their advisors.

INTRODUCTORY COURSES

- 101. Philosophy of Human Existence.** **3 cr.**
 An introduction into philosophical thinking, offering the student a basic philosophical interpretation of man. This interpretation begins with concrete problems which lie within the student's own sphere of interests and concerns and then shows the substantive philosophical issues involved in those problems. For example: the problem of freedom, responsibility, individuality and community might be approached from the perspective of the contemporary city, the contemporary university, current attitudes toward sexuality or the problems of technology, politics and economics.
- 102. Ethics.** **3 cr.**
 An introduction to ethical theories of past and present time. Contemporary moral issues will be considered in the light of these theories.
- 103. Logic.** **3 cr.**
 An analysis of the formal relationships between propositions, including valid forms of argument. Also, a description of some important informal aspects of ordinary discourse, such as types of definitions and common fallacies of inference.
- 111. Introduction to Philosophy.** **3 cr.**
 A first-hand study of selected philosophical texts, with the aim of introducing students to the nature of philosophical thinking, and to the variety of philosophical issues and areas, methods, and theories.

BASIC THEMATIC COURSES

- 203. Philosophy of Religion.** **3 cr.**
 An introduction to the distinctive nature of religious symbolism as an autonomous mode of experience, thought, discourse and activity. Special attention to such questions as: the nature and grounds of religious affirmation (as distinct from scientific, artistic and philosophical affirmation); the relation of the God of religion to the God of philosophy; the religious significance of history, evil, creativity and ethics. Assigned readings include both traditional and contemporary writers.
- 204. Philosophy and Literature.** **3 cr.**
 A study of selected works of authors such as Sophocles, Checkhov, Dostojevsky, Rilke, Nietzsche, D. H. Lawrence, Ibsen, Edward Albee, O'Neill, and Samuel Beckett. This study will respect the integrity of the works as artistic creations, enable the students, through class discussions, to create a shared experience of the works and proceed to a philosophical discussion of the issues presented by the writer, his characters or the situations he creates.
- 205. Existential Phenomenology.** **3 cr.**
 Introduction to the methods, central commitments, and style of interrogation which characterize existential phenomenology. Lectures and discussion over texts by major thinkers, such as *Being and Time* by Heidegger, *Phenomenology of Perception* by Merleau-Ponty, and selected writings by Sartre.

- 206. Philosophy of Society.** 3 cr.
An examination of the question of social existence. This course will explore man as a social and political being. Relations between the moral, the social, the political and the economical will be considered.
- 207. Philosophy of Science.** 3 cr.
A study of the philosophical implications of the methodology and conceptual framework of modern and contemporary science. Contrast between Newtonian and contemporary physics regarding such philosophical questions as the nature of matter, space-time, technique and technology.
- 208. Meaning of Contemporary Atheism.** 3 cr.
The meaning of Atheism as a contemporary phenomenon. Critical evaluation of some sociological and psychological theories of the origin of religion.
- 209. Concentrated Readings for Non-Majors.** 3 cr.
Similar to, but more elementary than, 325.
- 210. Philosophy of Femininity.** 3 cr.
A philosophical study of "the second sex," emphasizing phenomenology as a method which attempts to be free from prejudice; includes a discussion of some contemporary ethical and legal issues concerning the equality of women. Designed especially for non-majors.

HISTORY OF PHILOSOPHY COURSES

- 300. Ancient Philosophy.** 3 cr.
A study of the beginning of Philosophy in Greece, from the Presocratics to Plotinus with readings principally taken from Plato and Aristotle.
- 303. Medieval Philosophy.** 3 cr.
An intensive philosophical study of some medieval texts in English translation, selected as representative of the broad range of issues, approaches and theories which characterize the major Christian, Jewish and Islamic philosophical thinking of the period. Some questions confronted are: the existence and nature of God; the nature of discourse about God; the relation between religious belief and philosophical reasoning; the nature of man.
- 304. Modern Philosophy.** 3 cr.
This course emphasizes the most basic philosophical problems of the period from Descartes to the end of the 19th century. Course work consists of an analysis of several important texts chosen from such philosophers as Descartes, Leibniz, Hume, Kant, Hegel, Marx, Kierkegaard and Nietzsche. There is an emphasis on the tension resulting from the clash between the emerging natural sciences on the one hand and classical metaphysics on the other. The emergence of the historical sense. These problems are debated and discussed, particularly with their ramifications for contemporary thought.
- 305. Contemporary Philosophy.** 3 cr.
A study of contemporary philosophy from 1900 to the present, introducing the methods and history of selected twentieth-century movements with detailed attention to existential phenomenology.
- 322. Survey of American Philosophy.** 3 cr.
From Puritanism to the Enlightenment, Transcendentalism, Pragmatism, with emphasis on key figures in American Philosophy, Pierce, Dewey, James, Royce, Santayana, Whitehead, etc.

323. Oriental Philosophy.**3 cr.**

Introduction to Oriental thought through study of its major structures in their historical setting, aiming at understanding its characteristic vision. Examination of perspectives presented by traditions such as Confucianism, Taoism, Buddhism, Hinduism and others.

325. Concentrated Philosophical Readings.**3 cr.**

This course is an in-depth study of one or several philosophers such as Plato, Aristotle, Aquinas, Occam, Descartes, Kant, Wittgenstein, Strawson, Heidegger, etc., varying in subject matter from time to time. The specific author or authors will be announced in the schedule each semester.

ADVANCED THEMATIC COURSES**201. Philosophy of Knowledge.****3 cr.**

Interrogation of the nature and experience of Truth, especially by way of the explorations of Aristotle, Thomas Aquinas, Hegel, Husserl and Heidegger. Distinction between philosophical and non-philosophical (scientific or theological) knowledge. Designed for philosophy majors.

202. Philosophy of Being.**3 cr.**

The approaches of philosophers such as Aristotle, Aquinas, Kant, Hegel and Heidegger. God, world and man. Being, essence and existence. Time and history. Being and the possibility of metaphysics in contemporary thought. Designed for philosophy majors.

401, 402. Thomism (Being, Knowledge, Man).**3 cr. each**

A course dealing with the texts by St. Thomas in ontology, epistemology and the philosophy of man. Neothomism (Maritain and Gilson) together with reference to Transcendental Thomism (Rahner, Lonergan, etc.). Designed for philosophy majors.

403. Philosophy of God.**3 cr.**

Thematic course focusing especially on the experiential and conceptual relationships among the themes God, nature, freedom and morality. Designed for philosophy majors.

406. Aesthetics.**3 cr.**

Theories of beauty and the sublime in the light of contemporary problems of human existence, with special attention to Plato, Aristotle, Kant, Nietzsche, Heidegger, Camus and van der Leeuw. Artistic creativity as an approach to life and as a possible foundation for philosophical thinking.

407. Philosophy of Language.**3 cr.**

Introduction to the philosophy of language. Among the topics considered are the character and limits of formalistic approaches to language, the centrality of the speaking subject, relation of language to thought, language and linguistics, language and poetry, theories of structuralism.

408. Foundations of Ethics.**3 cr.**

A study of the philosophical foundations of Ethics. Foundational theories of Greek and Scholastic philosophy. Modern and contemporary ethical theories of foundation. Designed for philosophy majors.

- 409. Symbolic Logic.** **3 cr.**
An introduction to the methods of symbolic logic and a consideration of various issues in logical theory with regard to their philosophical significance.
- 410. The Philosophy of Karl Marx.** **3 cr.**
Historical and dialectical materialism in the writings of Karl Marx, Friedrich Engels, the Soviet Philosophy and contemporary Marxism.
- 411. Philosophy of History.** **3 cr.**
An analysis of linear and cyclical models of history in the light of the contemporary crisis of human existence with special attention to St. Augustine, Hegel, Marx, Nietzsche and the twentieth-century existentialism. The fundamental question of the course is how meaning can be found in historical experience.
- 412. Senior Seminar.** **3 cr.**
Devoted to a serious analysis of the major texts of one important figure in the history of philosophy.
- 413. Special Topics.** **1-3 cr.**
- 414. Philosophy of Man.** **3 cr.**
A reflective articulation of a conception of human existence, taking account in particular of the relations between man and nature, history, science, technology, society, religion. Concrete issues treated will be, for example: embodiment, intersubjectivity, finitude, theory and praxis, transcendence. Designed for philosophy majors.

Department of Physics

Chairman: Walter S. Skinner, M.S.

The program in the Department of Physics aims at not only providing today's student with a fundamental background in physics and its interrelationships with other sciences and disciplines, but also providing a suitable flexibility of program which will best fit the graduate for the challenge of today. While the department is hopeful that each student majoring in Physics will continue his professional growth, it is also realized that professional growth is not confined to a single path. The undergraduate program, therefore, provides the essential background for success in graduate work, but also provides the student with fundamental qualifications which will equip him for an available position in a research institution, government agency, or private corporation.

REQUIREMENTS FOR THE MAJOR

A minimum of 32 semester hours is required for a major. These credits must include: 211, 212, 301, 329, 330, 361, 372, 402, 429, 430, 473, 474 (483, 484, or 485 may be substituted for 474 with departmental approval).

Extradepartmental requirements: Chemistry 121, 122 or Biology 111, 112; Mathematics 115, 116, 215, 216, 315, (Physics 471 may be substituted for

Mathematics 315 with departmental approval); and two years of a modern language.

If a student takes 207, 208-Physics and the Modern World and either 201, 202-General Physics or 211, 212-General Analytical Physics, the credits for the 207, 208 will not apply to the total number required for the degree. Credit will not be given for both 201, 202 and 211, 212.

REQUIREMENTS FOR THE PHYSICS MINOR

The minor consists of eight hours in the General Analytical Physics (211, 212) and 12 credits of upper division physics on the 300 and above level. The department will structure the minor program from the course offerings to fit, as nearly as possible, the needs and desires of the individual student.

REQUIREMENTS FOR THE EARTH SCIENCE MINOR

The minor consists of a prerequisite sequence of 101 and 102, which must be taken as the first courses, and 12 credits chosen from 203, 204, 303, 304, 305 as available to the curriculum. Not all courses are taught each semester.

Earth Science 101 is prerequisite to all courses.

201, 202. General Physics

4 cr. each

Designed to give the student a basic knowledge and understanding of mechanics, properties of matter, heat, wave motion, sound, magnetism, electricity, light, and modern physics through the use of life science oriented explanations and applications. At the completion of this course, the student should have attained a working knowledge of physics, its techniques and reasoning such that the knowledge of physics gained may be applied to future work in the life sciences or other fields of endeavor. Prerequisite: Mathematics 103, 104 or the equivalent. Lecture, four hours; Laboratory, two hours.

207, 208. Physics and the Modern World.

3 cr. each

A course for nonscientists. A lecture course attempting to bridge the two-culture gap. This course includes basic philosophical concepts in Physics which pervade all human discipline. Examples are taken from modern physics, relativity, elementary particles, quantum theory, statistics, etc. to cover model-making, dynamics, ensemble behavior, symmetry. No mathematics beyond elementary school level are required.

211, 212. General Analytical Physics.

4 cr. each

This is a general introduction to the basic physical theories and concepts. An attempt is made to develop in the science student the quantitative approach of the physicist to the physical universe. Some of the topics which may be included are vectors. Newton's Laws of Motion, the motion of a particle in space, momentum, energy, rigid body motion, fluids, gravity, wave motion, the first and second laws of thermodynamics, electricity and magnetism, optics. Corequisite for Physics 211: Mathematics 116. Lecture, three hours; Laboratory, two hours.

301. Thermodynamics

3 cr.

This is an intermediate level course covering the fundamental principles of thermodynamics, kinetic theory and statistical mechanics. The following is a partial list of items generally included: temperature, thermodynamic systems, work, heat, the first and second laws, ideal gases, entropy, Maxwell's equation, the kinetic theory of ideal gas, and the basic concept of statistical mechanics. Prerequisites: Physics 212; Mathematics 215.

- 306. Applied Electronics Laboratory** **2 cr.**
This course seeks to combine a treatment of the principles of modern electronic instrumentation with practical laboratory experience. Topics which will be included are: passive and active electronic components, electronic measuring instruments, power supplies, amplification, feedback and control, impedance matching, linear and digital devices. Emphasis will be on proper use of instrumentation rather than on advanced principles of design. Prerequisite: Permission of instructor.
- 329. Advanced Laboratory I.** **1 cr.**
Advanced Lab I is concerned with electromagnetic phenomena and basics of modern electronics. A set of programmed experiments is performed and analyzed by the students. Subjects covered are: the use of electronic instruments, dynamics of electrons in electronic and magnetic fields, electric circuits. Prerequisite: 212 or 202 and consent of instructor.
- 330. Advanced Laboratory II.** **1 cr.**
Advanced Lab II is a continuation of Advanced Lab I and includes the following items: basic semiconductor electronic devices, transistor amplifiers and oscillators, the klystron and microwave optics. Prerequisite: 329 or consent of instructor.
- 361. Mechanics.** **4 cr.**
An intermediate course in the application of Newtonian Mechanics to simple systems. A short introduction to Vector Calculus precedes the main discussion. The topics normally covered are dynamics of a mass point, systems of particles, generalized coordinates and Lagrange's Equations. Other topics which may be included by the instructor are normal modes, rigid bodies, two bodies with a central force, and waves on a string. Prerequisites: Physics 212, Mathematics 215.
- 372. Electromagnetism.** **4 cr.**
The following topics are usually discussed: electrostatics, energy relations in electrostatic fields, dielectrics, currents and their interaction, magnetic properties of matter, AC circuits, Maxwell's equations, reflection and refraction of electromagnetic waves, dipole and plane sheet radiation. Prerequisites: Physics 212; Mathematics 215.
- 402. Optics.** **3 cr.**
Optics provides the student with an opportunity to penetrate the surface of optical phenomena and observe the underlying physical principles. Topics usually included are the vectorial nature of light, coherence, interference, diffraction, polarization, and laser optics. Prerequisite: Physics 212.
- 429, 430. Advanced Laboratory III, IV.** **1 cr. each**
Advanced Lab III is a *one-year* senior research project in which the student selects a project, develops it, and prepares a report. Topics are selected from those suggested by members of the Physics Department or associated departments, and the work is carried out in close coordination with the selected advisor. Work, however, must be the student's own. No grade is assigned for the first semester, and the grade for the course is assigned upon completion of the project.
- 473. Atomic Physics.** **3 cr.**
This course provides an introduction to special relativity and quantum theory with applications drawn mainly from modern theories of the atom. Topics usually included are quantum theory of heat radiation, the uncertainty principle, quantum theory of the hydrogen atom, many-electron atoms, atomic spectroscopy. Prerequisites: 212 and consent of instructor.

474. Quantum Mechanics.**3 cr.**

A basic introduction to the dynamics of quantum phenomena. Some of the topics covered are Schroedinger Equation, oscillators, hydrogen atom, linear operators. Hermitian Matrices, observables, conservation theorem, spin, angular momentum and perturbation theory. The course will emphasize application to simple systems. Prerequisites: Physics 212; Mathematics 215.

483, 484, 485, 486. Special Topics.**1-3 cr. each**

Designed to allow the Physics major flexibility in scheduling, this course may include the following:

483. Nuclear Physics.**3 cr.**

Many of the experimental and theoretical aspects of the atomic nucleus are discussed. Some of the usual topics are: two-nucleon systems, radioactivity, (alpha, beta and gamma decay), radiometric dating, interaction of radiation with matter, nuclear structure, nuclear reactions, and nuclear fission. Prerequisite: 202 or 212.

484. Introductory Solid State Physics.**3 cr.**

Bulk properties of materials are discussed from both the phenomenological and microscopic approaches. Typical topics are the geometric structure of solids, waves and diffractions, thermal properties, the free electron model, band theory, superconductivity, magnetic properties and magnetic resonance. Prerequisites: 212 and consent of instructor.

485. Relativistic Mechanics.**3 cr.**

This course is an introduction to the Special and General Theories of Relativity. A list of topics which may be discussed are absolute space, Einsteinian Kinematics, Einsteinian Optics, spacetime and four-vectors, relativistic particle mechanics. Prerequisites: Physics 212; Mathematics 215.

486. Shop Techniques.**1 cr.**

A basic introduction to machine shop practices necessary to experimentalists in all fields. Some of the areas covered are: shop equipment and its use, materials, soldering and welding techniques, mechanical drawing and schematics, electronics construction techniques and practical application.

EARTH SCIENCE**101. Physical Geology. (Prerequisite to all courses.)****3 cr.**

This introduction to the geological processes and materials will concentrate on the makeup of our planet and the materials involved. Study will also include physical features and the processes of the earth, as presently understood, which have created those features. Geological relation to environment is also examined.

102. Historical Geology.**3 cr.**

A study of the earth's history which relates tectonic movements of the crust. Mountain building processes and life history with their interrelations will be discussed. Evolution of local features will be discussed also.

103. Physical Geology Laboratory.**1 cr.**

An introduction to the identification of rocks and minerals by composition and appearance and the interpretation of topographic maps. The use of maps to identify the causes of drainage and some effects of water and erosion will be experienced. Mapping tools will be introduced, as will some field equipment.

- 104. Historical Geology Laboratory.** **1 cr.**
An accompaniment for ES 102, providing an introduction to sedimentation and the use of fossil identification. Columnar sections, Aerial Geologic maps, and Aerial Photos will be used.
- 203. Astronomy.** **3 cr.**
Introduction to the study of astronomy and the basics of observation. Study will include telescopic types and the known universe as identified from present study. Course will, *if possible*, include arrangements with Buhl Planetarium and Allegheny Observatory. Star types and distances will also be examined.
- 204. Meteorology.** **3 cr.**
Elementary study of meteorology and weather systems in the local area as well as the world patterns. A weather station has been installed on Mellon Hall, and observation and prediction will be practiced. Local and U.S. Weather Bureau services will be used and analyzed when possible.
- 303. Oceanography.** **3 cr.**
An introduction to the marine environment including the geology and ecology. Attention is paid to the importance of dangers to the ecosystem. Characteristics of oceanic waters and circulation patterns will be discussed. Summer courses may be combined with one of several universities offering facilities.
- 304. Environmental Earth Science.** **3 cr.**
An examination of the problems of ecology and the impact of modern living on the systems of the earth which are necessary for plant and animal life. The individual effects of both natural and man-made pollution and their results, as well as possible cures. An advance over 101, 102 with an effort to have the student gain a balanced, non-hysterical appreciation of cause, effect, and search for solution.
- 305. Physiography of the United States.** **3 cr.**
Introduces the student to the various topographic and physiographic differences in the contiguous states as well as Alaska and Hawaii. This course is designed to allow the student to become familiar with the terrain, resources, economies, and individual problems of the various regions of our country. An approach to demonstrate the fact that no generalization may be made to fit all areas at once, but different problems are associated with each resource and each region.

Department of Political Science

Chairman: A. Kenneth Hesselberg, Ph.D.

Political science is concerned with developing the person. Through the study of the science of politics, the student will develop his analytical and intellectual skills. Political science graduates pursue careers in many diverse fields including governmental administration and service, teaching careers at various levels, law, and business.

REQUIREMENTS FOR THE MAJOR

Twenty-four semester hours are required for a major in political science in addition to 101; these credits must include 208, 309, and 405 or 406.

Political Science 101 is prerequisite to all other courses.

REQUIREMENTS FOR THE MINOR

General minor in Political Science. This minor is designed to provide the student with a comprehensive view of the entire discipline and is recommended for those students who may later contemplate graduate study or think that they might eventually like to change from a minor to a major in Political Science. It consists of a minimum of 13 credits beyond the freshman course (Political Science 101); The 13 credits encompass the following required courses: 208, 221, 222, 309, and 405 or 406.

The concentrated minor. Students wishing to concentrate in a particular area of Political Science may elect the following minors:

1. *American Government:* Political Science 221, 222, and a minimum of eight credits from among: 231, 240, 241, 242, 276, 301, 302, and 407.
2. *Comparative Government:* Political Science 208 and a minimum of nine credits from among: 315, 316, 318, 321, 408, 412, and 413.
3. *International Relations:* Political Science 309 and a minimum of nine credits from among: 215, 312, 320, 402, and 409.
4. *Political Theory:* Political Science 405, 406, and a minimum of six credits from among: 306, 407, 410, and 420.

Minors associated with other majors. The following Political Science courses are suggested as being especially relevant to the majors indicated. The student may chose a minor consisting of 12 or more credits in any of these courses:

Suggested for a Sociology major: Political Science 240, 276, 315, 316, 407, 408, and 420.

Suggested for a Philosophy major: Political Science 306, 405, 406, 407, 410, and 420.

Suggested for an Economics major: Political Science 208, 306, 309, 315, 321, 405, and 406.

The selective minor. The Department of Political Science will also devise a minor from its course offerings to fulfill the particular needs and desires of a student in any major area of concentration. Such a minor must be structured in consultation with the student's faculty adviser and the Department Chairman.

- 101. Introduction to Political Science** (Prerequisite to all courses.) **3 cr.**
An investigation of the most fundamental concepts involved in the study of political society.
- 201. American Political System.** **3 cr.**
Case studies in the American Political System—An intensive investigation of selected problem areas in the American System of government.
- 208. Comparative Political Systems** **3 cr.**
A systematic, multifocused analysis of selected political systems.
- 215. National Strategy.** **3 cr.**
A study of the elements that constitute the strategic environment and the forces that affect the application of these elements in the formulation and determination of national security strategy.
- 221, 222. American Federal Government** **2 cr. each**
An intensive analytical description and evaluation of the American Constitutional system with emphasis upon the basic institutions of government.
- 231. Constitutional Law.** **3 cr.**
An intensive investigation of the role of the Supreme Court in the American system of government, concentrating upon the study of selected key court decisions. Prerequisites: 221, 222.
- 240. American Political Parties.** **3 cr.**
An intensive study of the roles of interest groups and political parties in the decision-making processes of the American system of government with attention devoted to the internal dynamics of these institutions.
- 241. The American Presidency** **3 cr.**
A study of the role of the President at the center of the decision-making process in the American political system.
- 242. The American Congress.** **3 cr.**
An investigation of the operation of the Congress of the United States within the American system of government.
- 276. Voting and Election Behavior.** **3 cr.**
An examination of the determinants of opinions and political beliefs, political participation, and voting behavior; the significance for democratic government of findings in these areas. For majors only.
- 301. State and Local Government.** **2 cr.**
A study of the position of the state and local governments in the Federal Union.
- 302. Municipal Government** **2 cr.**
A study of the role of local government in the state and federal systems.
- 306. Comparative Communist Ideologies.** **3 cr.**
An analysis of the major ideological themes expressed by the communist regimes of the USSR, Eastern Europe, China and Cuba.

- 309. International Relations** 3 cr.
A study of the major factors involved in international relations including such concepts as sovereignty, nationalism, balance of power, and international law and organization.
- 312. International Law and Organization.** 3 cr.
A survey of the historical development and present role played by international law in the world community and the formation and operation of such organizations as the United Nations and its specialized agencies.
- 315. Politics of the Emerging Nations.** 3 cr.
A topical study of the politics of the emerging nations including nationalism, political integration, political parties, and the role of the military and elite.
- 316. Politics of Africa** 2 cr.
A study of the principal theories and issues in the politics of sub-Sahara and Africa.
- 318. Nationalism.** 3 cr.
A study of the dynamics of nationalism with emphasis on the role of nationalism in the developing nations.
- 320. United States Foreign Policy.** 3 cr.
A study of American foreign policy since the Second World War, with emphasis on the central present issues and the domestic sources of foreign policy.
- 321. Government and Politics of Eastern Europe.** 3 cr.
An analysis of political developments in the communist regimes of Eastern Europe with special emphasis on relations between the USSR and Eastern Europe in the post-Stalinist era.
- 325. Juniors Honor Seminar.** 2 cr.
Intensive study of selected topics in Political Science. Admission by invitation of the Department.
- 402. Soviet Foreign Policy.** 3 cr.
An analytical study of the development of Soviet foreign relations since 1917, with special emphasis upon the post-Stalinist era.
- 404. Simulation in International Politics.** 3 cr.
Students spend the semester simulating an international conflict situation. They act as foreign policy decision-makers, applying the principles, concepts, and instruments of international politics. For majors only.
- 405, 406. Western Political Thought.** 3 cr. each
A study of political ideas as distinct from and yet related to political institutions which constitute our perennial western political heritage.
- 407. American Political Thought.** 3 cr.
An analysis of the issues which have played a fundamental role in American Politics, from colonial church-state problems, to modern liberalism and conservatism.
- 408. Theory of Comparative Government** 3 cr.
An examination of the basic theories and concepts in contemporary approaches to comparative political systems.
- 409. Theory of International Relations.** 3 cr.
A study of various theoretical approaches to an understanding of international relations including political realism, systems analysis, decision-making, and equilibrium analysis.

- 410. Oriental Political Thought.** 3 cr.
This course purports to explore the cultural heritages of China and India insofar as, and to the extent that, they reveal themselves either directly or indirectly in expressions of political thought.
- 412. Government and Politics of Germany.** 3 cr.
A study of the government systems of Germany in their historical and ideological development.
- 413. Government and Politics of the USSR.** 3 cr.
An intensive analysis of the origin and evolution of the Soviet political system, with particular emphasis upon the developments of the post-Stalinist era.
- 420. Contemporary Political Theory** 3 cr.
A study of central topics in political thought from Marx to the present time.
- 430. Internship in Practical Politics.** 3 cr.
A work and observation experience in government and political offices at the city, county, state, and national levels in the Pittsburgh area.
- 436. Senior Honors Colloquium.** 3 cr.

Department of Psychology

Chairman: Rev. David L. Smith, C.S.Sp., Ph.D.

The undergraduate program of the Department of Psychology is designed: (a) to introduce and familiarize students with the fundamental content, issues, and interests of various areas of psychology and critically evaluate and reformulate these in the context of psychology as a human science; (b) to foster intellectual and personal freedom and critical thinking as essential to the humanizing process; (c) to prepare the professionally oriented student for advanced study; (d) to provide a foundation for careers involving human services. To these ends, the department offers a wide variety of courses covering psychology conceived as a human science, a natural science, and within a historical perspective. Further study in graduate school prepares students for careers in mental hospitals, schools, mental health and social welfare agencies, business and industry. In our rapidly changing society the demand for professionally trained psychologists is increasing.

While the department believes that human scientific psychology is the most viable and encompassing approach to the study of man, it also realizes its responsibility to expose its students to other psychological approaches. Hence, every major who plans to enter graduate school in psychology is strongly encouraged to take advantage of the offerings in sister universities through the procedure of cross-registration.

REQUIREMENTS FOR THE MAJOR

The major program consists of 103-Introduction to Psychology plus a minimum of 24 semester hours. These credits must include 220 and 223. Majors desiring to pur-

sue graduate study in psychology are strongly advised to take six additional credits through cross-registration at other universities (Learning Theory, Experimental, Perception, Memory, etc.), and 225 Statistics in the Mathematics Department, which may also be considered a part of the mathematics/science requirement. Finally, it is recommended that majors enroll in a hospital or community practicum for credit, and/or do volunteer work in a neighborhood clinic. The three credits earned in practicum are included in the 24 required credits; an additional three credits in practicum may be earned above and beyond the required minimum of 24. Information about such opportunities can be obtained from the department course advisor.

The psychology department has set up a dual advisement system: the course advisor and the faculty advisor. Prospective majors should consult the Department Course Advisor concerning the special procedure followed for the declaration of the major.

REQUIREMENTS FOR THE MINOR

Requirements for a minor are 103 and 223 and any three of the following: 225, 280, 328, 340, 352, 361, 390, plus 400 level courses with permission of the department head.

Psychology 103 is prerequisite to all courses.

103. Introduction to Psychology. 3 cr.

An introduction to fundamental concepts, methods and points of view of psychology. These will be examined from both traditional and phenomenological perspectives. This course is a prerequisite to all other courses in the department.

220. Systematic Psychology. 3 cr.

A course designed for and open only to Majors. Its purpose is to offer an in depth study of some standard interests of psychology, such as sensation, perception, learning and motivation. These will be examined from various traditional perspectives; for example, from behavioristic, physiological and psychoanalytic perspectives.

223. Introduction to Existential Phenomenological Psychology. 3 cr.

An examination of the assumptions implicit in psychology's historical development as a natural science, and an introduction to alternative foundations, literatures, and practices of psychology conceived as a specifically human science. This course is a prerequisite for Psychology 356 and 410, and is a requirement for psychology majors.

225. Developmental Psychology I. (Infancy and Childhood) 3 cr.

Growth and development of the child with an emphasis on understanding of personality development.

226. Developmental Psychology II. (Adolescence and Maturity) 3 cr.

The description and understanding of the behavior and development of the growing person from adolescence through the stages of adulthood to the experience of death.

227. Human Development. 3 cr.

Basic principles of human development over the life span. This course is primarily intended to fulfill a requirement for Education and Nursing students. Not counted toward a major.

- 230. Psychology of Community Experience.** 3 cr.
This course is an exploration into different phenomena of a community. Issues such as one's openness to the group, individual priorities versus group priorities, intimacy versus privacy, etc. are examined. This exploration emphasizes personal participation by class members in the class. Community and interpersonal exercises will be used often in the classroom. Registration is limited and requires permission of the instructor.
- 280. History of Psychology I.** 3 cr.
An overview of the principal figures and issues constituting the history of psychology from its precursors to contemporary contributors.
- 328. Psychology of Personality.** 3 cr.
A critical examination of fundamental issues and themes of the major personality theories of personality and the integration within these constructs of theoretical and empirical contributions of psychology and psychiatry; implications for research, diagnostics and psychotherapy.
- 340. Social Psychology.** 3 cr.
The foundations of social behavior-culture, social processes, and social movements; social attitudes, values and roles; public opinion, propaganda and communication; personal participation in society.
- 352. Abnormal Psychology.** 3 cr.
An examination of the theories and data of disordered human existence. Included will be the traditional diagnostic categories, such as neuroses and psychoses, examined in terms of personal, social, and cultural aspects of these disorders.
- 356. Research Psychology: Theory and Practice.** 3 cr.
A description and interrogation of the meaning of scientific investigation in psychology, including both standard and human science approaches and methods. The values and limits of these approaches, and a consideration of the meaning of investigation in psychology conceived as a human science. Permission of department head for non-majors. Students will participate in research projects. Prerequisites: 220, 223.
- 361. Psychology of Identity and Fulfillment.** 3 cr.
This course is explicitly designed to be personally relevant to the life of the student. Texts, lectures, group discussions and written work all focus on the way in which identity is lived individually and collectively. Identity is seen and descriptively articulated as a contextual phenomenon involving culture, interpersonal relations, learned traditional ways of living, as well as a developing sense of self given to the individual. (Open to Juniors and Seniors only)
- 370. Psychology of Aesthetic Experience.** 3 cr.
A psychological articulation of the aesthetic dimension of human existence. The course content will be both theoretical and empirical.
- 390. History of Psychology II.** 3 cr.
A dialogue with particular historical figures in psychology geared to an understanding of contemporary themes. Students will be engaged in the reading of selected primary sources. Prerequisite: 280.
- 410. Advanced Existential Phenomenological Psychology.** 3 cr.
A detailed investigation of selected works in existential-phenomenological philosophy and psychology. Prerequisite: 223.

- 415. Applied Psychological Practicum. 3 cr.**
A setting of applied psychology provides an opportunity for active participation with professionals in their work. In addition to a practicum in a psychiatric hospital, from time to time other settings will also be available, such as community mental health centers and youth programs. Prior coursework in psychology is a prerequisite; Abnormal Psychology is required for clinical settings. Psychology majors only, with permission of department head. Repeatable for a maximum of six credits.
- 425. The Individual and His World. 3 cr.**
A social psychology course that examines the contemporary individual's relationships to society from a developmental and cross-cultural perspective. Emphasis is on communication processes and theories of speech as they relate to interest groups and special communities.
- 432. Gestalt Psychology. 3 cr.**
An examination of the contributions of Gestalt Psychology to the development of both traditional and human science psychology. Emphasis is on such phenomena as thinking, perception, insight, and concrete and abstract behavior, especially through the works of Koffka, Kobler, and Goldstein. Permission of department head for non-majors.
- 433. Principles of Psychoanalytic Thought. 3 cr.**
An examination of the times and contributions of Freud and selected other major psychoanalytic theorists. Permission of department head for non-majors.
- 434. Psychology of Language and Expression. 3 cr.**
A consideration of communication as a live, embodied relation of the person to world and to others. Emphasis is on phenomenological theorists. Permission of department head for non-majors.
- 450. Contemporary Issues in Clinical Psychology. 3 cr.**
An examination from a human science perspective of the approach, methods, and current issues of clinical psychology. Clinical psychology includes psychological assessment intervention and therapy, and promotion of optimal existence. Prior coursework in psychology is advisable, especially 223. Permission of department head for non-majors.
- 457. Independent Studies. 3 cr.**
This course is designed to provide the exceptional student with an opportunity for pursuing a particular course of study in which he is keenly interested under the guidance of a faculty member. As such it is restricted to the psychology major and presupposes that he is well into the field of psychology. For the most part it is reserved for seniors, particularly those who intend graduate study in psychology, and is conducted after the manner of a tutorial. A student who wishes to take this course should clear it with a particular faculty member and then receive in writing permission of the department head.
- 490. Special Topic. 1-4 cr.**
This course is a variable one. For the most part, it is reserved for visiting professors who are invited by the psychology department of the University to introduce the students to their own areas of expertise. It may also be used to introduce experimental courses or highly specialized studies by one of the regular faculty. In such instances the instructor may establish prerequisites. Repeatable. Permission of department head for non-majors required.

Department of Sociology

Chairman: Chester A. Jurczak, Ph.D.

Undergraduate instruction in sociology contributes to the liberal education of students regardless of major and to the preprofessional training leading to graduate work in sociology and social work, urban affairs, urban planning, and criminology. Helping students in practical ways to live effectively and to become effective in practical attacks on social problems is another objective of the department.

Sociology studies all of this formally in courses designed to give students a sense of direction, a selective taste of materials and methods, and motivation so that they can devote some of their energies to independent observation and experimentation, and develop their own concepts about how society functions.

REQUIREMENTS FOR THE MAJOR

A minimum of 24 semester hours, not including 101 are required for a major in Sociology; these credits must include 201 and 304; in addition, the courses 210 and 314 are strongly recommended.

REQUIREMENTS FOR THE MINOR

A minimum of 12 semester hours, not including 101, are required for a minor; 450, 451, 488, and 492 are reserved for majors only.

Sociology 101 is a prerequisite to all courses except 102 and 203; 102 can be substituted for 101 as a prerequisite for 306, 307, and 310. All 300 and 400 courses are for Juniors and Seniors only.

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| 101. Survey of Sociology. | 3 cr. |
| A broad survey of the social and cultural aspects of environment. | |
| 102. Survey of Anthropology. | 3 cr. |
| An introduction to the field of Anthropology, both physical and cultural. | |
| 195. Military in Society | 3 cr. |
| A study of the organizational setting, the social processes and recent fundamental changes of the American military. | |
| 201. Sociological Theories. | 3 cr. |
| A study of selected European and American theorists. For sociology majors and minors only. | |
| 202. Sociology of Social Problems. | 3 cr. |
| Study of person-structure-change framework applicable to contemporary social issues. | |
| 203. Survey of Social Work. | 3 cr. |
| Survey of the history and areas of social work-casework, group work and community organization; public and private welfare programs. | |
| 205. Person and Society. | 3 cr. |
| An exploration of socialization, person's interaction with structure and culture, small groups and collective behavior. | |

- 208. Black Ghetto** **3 cr.**
Study of the structure, problems, and changes in the American Black Ghetto.
- 209. Social Work Theories.** **3 cr.**
A study of the theories underlying social work practice, including a review of the classic schools of social work. Prerequisite: Sociology 203. For sociology majors and minors only.
- 210. Social Work Process.** **3 cr.**
A survey of the social work process in terms of exchanges between clients, social workers, and the community.
- 304. Methods in Sociology.** **3 cr.**
Discussion and application of techniques and research procedures used in sociological research.
- 306. Personality and Culture.** **3 cr.**
A cross-cultural examination of human social systems in terms of their relevance to personality development and interaction.
- 307. Behavioral Anthropology.** **3 cr.**
Discussion of the relationship between culture and biology.
- 308. Ethnic Groups.** **3 cr.**
A comprehensive survey of roles performed and problems faced by ethnic groups.
- 309. Women in Society.** **3 cr.**
The role of women in culture, and the study of women's movements for liberation.
- 310. Physical Anthropology.** **3 cr.**
Study of the origin of man, comparative study of anatomical differences among men, and the study of the influences of physical environment on man.
- 312. Sociology of Sports.** **3 cr.**
Study of the institutions of sports and their relation to American culture and other institutions.
- 313. Sociology of Sexual Behavior.** **3 cr.**
Discussion of sociological studies of sexual behavior.
- 314. Social Work Methods.** **3 cr.**
Study of case study, study-diagnosis-therapy process, interviewing-counseling, and program planning. Prerequisite: Sociology 203. For sociology majors and minors only.
- 315. Social Development—Infancy to Death.** **3 cr.**
Study of the socializing process from the infant state to the dying state.
- 316. The Helping Process: An Introduction** **3 cr.**
Discussion of the social process of helping others, ranging from the consideration of the professional, the population a person serves and the dynamics of the interaction. The perspective is personal-social.
- 325. Family Systems.** **3 cr.**
Comparative study of the family; the interaction of the family with other community institutions.
- 326. Urban Society and Ecology.** **3 cr.**
Analysis of the metropolitan complex of central city, suburbs, and urban fringe, and its

impact on structures within its environs; ecological, demographic, and planning factors will be analyzed.

- 327. Sociology of Work and Industry.** 3 cr.
Study of sociological theory and findings in the area of work and industry.
- 329. Religion in American Society.** 3 cr.
An analysis of American religious groups as social phenomena.
- 334. Delinquency.** 3 cr.
A study of the nature, trends, extent and causes of juvenile delinquency; evaluation of existing therapies will be examined.
- 335. Criminology.** 3 cr.
A study of causes of crime and its treatment.
- 337. Corrections.** 3 cr.
A discussion of preventive and penological approaches to the delinquent and criminal and their situations. Prerequisite: Sociology 334 or 335.
- 338. Race Relations— Black and White.** 3 cr.
Analysis of the contemporary racial crisis in America in the light of sociological concepts and theories.
- 340. Afro-American Minority.** 3 cr.
Concentration on the structure and culture of the Afro-American group with its attendant problems.
- 341. Sociological Measurement.** 3 cr.
Discussion of problems of measurement in sociological research. For sociology majors and minors only.
- 450. Field Work I** 6 cr.
Student does directed study in one or more social work agencies. Prerequisites: Sociology 203, 314. For sociology majors only.
- 451. Field Work II.** 6 cr.
Student does directed study in one or more social work agencies. Prerequisites: Sociology 203, 314. For sociology majors only.
- 454. Political Sociology.** 3 cr.
A study of power relationships in government and other social systems.
- 488. Field Research** 3 cr.
Independent study under a selected mentor. Student performs a field research project. Prerequisite: Sociology 304. For sociology majors only.
- 492. Selected Readings.** 1-3 cr.
For sociology majors only.

Department of Speech Communication and Theatre

Chairman: Eva C. Robotti, M.A.

The program provides training essential to the several areas of speech communication. The department offers both its majors and interested students from other fields the opportunity to choose courses from a particular area of concentration or the whole range of the discipline.

AREAS OF CONCENTRATION

Social Communication: This focuses on the theories and techniques of human communication on both the personal and societal levels. The student of social communication examines the concepts and procedures which govern men's interactions as individuals and as parts of the mass. He also learns the practical arts of critical analysis and persuasive communication.

This training is excellent preparation for careers in law, government, administration, personnel, public relations, industrial communications, advertising, sales, social work, and all fields which involve human symbolic interaction.

Recommended courses: 101, 102, 204, 206, 300, 304, 311, 406, 421.

Theatre/Media: The Theatre/Media concentration prepares the student for the fields of applied communication: theatre, radio-television, and public relations. This area lays a solid groundwork for careers in acting, directing commercially or in educational theatre, producing, the many aspects of broadcasting, and public relations. Along with classroom theory, students will have opportunity to obtain practical experience onstage and backstage in Red Masquer productions, and by on-and-off-the-air work at WDUQ (90.5 FM), Duquesne's twenty-five thousand watt National Public Radio affiliate. Ideally, the Theatre/Media student combines both activities.

Recommended courses: 190, 200, 201, 301, 305, 306, 307, 309, 310, 405, 407, 421.

Aesthetics of Communication: This is designed to introduce the student to the aesthetic values of the spoken language by providing courses which are related to speech as a presentational art. Among such offerings are courses which deal with the art of vocally projecting the experience of literature as manifested in works of great poetry and prose and courses in the vocal presentation of dramatic characters. One of the more singular department offerings is a course training the student in the art of orally presenting Biblical literature, considered by Duquesne to be a rare experience.

Students interested in this area have the opportunity to display their artistic skills in oral presentation through Duquesne University Reader's Guild; oral presentation of poetry and oral performance of dramatic works are two of the major functions of this organization.

Recommended courses: 190, 201, 301, 307, 309, 310, 419, 421.

Speech Pathology: The profession of speech pathology and audiology is concerned with impairments in the processes of communication—speech, language, and hearing. Upon completion of graduate education, a speech pathologist or audiologist may provide clinical services or work in basic and applied research. He or she may be employed in schools, hospitals, laboratories, community service centers, or colleges and universities. Speech pathology and audiology is a rapidly growing field, and the demand for trained personnel far exceeds the supply.

This area of concentration at Duquesne is a pre-professional program designed to prepare the student for graduate study in speech pathology and audiology.

Required courses: 201, 203, 204, 303, 308, 409, 410, 420.

REQUIREMENTS FOR THE MAJOR

A minimum of 30 semester hours is required for a major in Speech Communication and Theatre. Majors will be required to enroll in three of the following four courses: 101, 102, 190, 201.

A maximum of 12 transfer credits in speech can be applied to the major requirements.

REQUIREMENTS FOR THE MINOR

The minor consists of 18 credits: six credits in required introductory courses and 12 additional credits. There are five emphases that the student may follow:

1. *Social Communication:* 101, 102, plus 12 credits in any of the following: 204, 206, 300, 304, 311, 406, 421.
2. *Theatre/Media:* 190, 201, plus 12 credits in any of the following: 200, 305, 306, 307, 309, 310, 405, 407, 421.
3. *Aesthetics of Communication:* 190, 201, plus 12 credits in any of the following: 301, 307, 309, 310, 419, 421.
4. *Speech Pathology:* 201, 203, plus 12 additional credits. Courses 303 and 409 are required; the remaining six credits may be taken in any of the following: 308, 410, 420.
5. *General Speech Communication and Theatre:* 190 and either 101 or 102, with 12 additional credits apportioned in the following manner: six credits in any of the following: 204, 206, 300, 304, 311, 406; plus six credits in any of these: 200, 201, 301, 305, 306, 307, 310, 405, 407, 419.

Suggested activities for majors and minors in Speech Communication and Theatre include the Red Masquer Dramatic Organization, the department-sponsored Reader's Guild, WDUQ Radio and Television, the Debate Team, Inter-collegiate Conference on Government, The *Duke* (student newspaper), and United Nations Organization.

101. Process of Communication

3 cr.

Provides an understanding of the nature of the communication process by examining man from the perspective of how he believes.

- 102. Techniques of Oral Communication** 3 cr.
Develops those communicative skills necessary to critically analyze verbal discourse and to perform effectively in public speaking situations which confront the educated person.
- 190. Introduction to Theatre Arts** 3 cr.
A survey of theatre as an art form, involving the selective integration of a number of skills and disciplines to bring about the aesthetic of the theatrical moment. Beginning with lectures on the roles of the director, actor, designer, and various craftsmen, the course will work up to a sampling of the various modes and forms of drama in terms of the exigencies of production.
- 200. Radio and Television Announcing.** 3 cr.
The application of the principles of proper delivery to the field of oral reporting and continuity announcing, including enunciation, pacing, selective emphasis, tonal variance, the use of technical material, and an introduction to foreign language pronunciation. The facilities of WDUQ-FM and WDUQ-TV will be available for laboratory experience.
- 201. Phonetics.** 3 cr.
An approach to the English language based upon the fundamentals of vocal and articulatory speech sounds as systematized by the International Phonetic Association.
- 203. Problems in Speech.** 3 cr.
A survey of various speech disorders, their causes, recognition, and possible therapy.
- 204. Interpersonal Communication.** 3 cr.
A course designed to investigate the various aspects of interpersonal communication. Primary consideration will be given to face-to-face human interaction in a variety of situations.
- 206. Discussion and Group Process.** 3 cr.
Develops those communicative skills essential for functioning effectively in the small-group situation.
- 300. Argumentation and Debate** 3 cr.
A course in applying the principles and methods of critical deliberation to a significant contemporary social issue. Emphasis will be on advocating, defending, and refuting a proposition of policy. Prerequisite: 102 or permission of the instructor.
- 301. Oral Communication of Literature.** 3 cr.
An approach to literature in terms of its oral traditions with special emphasis on techniques preparatory to the act of oral presentation.
- 303. Introduction to Speech Pathology.** 3 cr.
This course will focus upon the clinical management of speech and hearing problems. Past and current therapeutic approaches and techniques will be presented in relation to disorders of speech and hearing. Different organizational procedures and practices will also be included. Prerequisite: 203 or permission of the instructor.
- 304. Persuasion.** 3 cr.
A study and application of principles and practices that influence people's beliefs and actions. Prerequisite: Either 101 or 102 or permission of the instructor.
- 305. Development of the Theatre I.** 3 cr.
A study of the origin and development of theatre and drama from pre-Grecian civilizations to the seventeenth century, investigated in light of the particular world view which it expresses.

- 306. Development of the Theatre II.** **3 cr.**
A study of the development of theatre and drama from the seventeenth century to the early twentieth century, investigated in light of the particular world view which it expresses.
- 307. Acting I.** **3 cr.**
A study of the basic principles, theories, and techniques of acting, including various problems confronted by the actor in the creation and interpretation of a role.
- 308. Anatomy and Physiology.** **3 cr.**
This course will study the basic neurological, skeletal, and muscular structures involved in the speech and hearing process. Prerequisite: 203 or permission of the instructor.
- 309. Advanced Oral Communication of Literature.** **3 cr.**
A continuation of 301, with special emphasis on techniques for the oral presentation of specific literary genres. Prerequisite: 301.
- 310. Acting II.** **3 cr.**
An advanced course dealing with the principles and techniques of various acting styles with major concentration on the oral communication of a dramatic role. Prerequisite: 307 or permission of the instructor.
- 311. Communication Theories.** **3 cr.**
Communication theories applied to contemporary systems of belief. Prerequisite: 101 or permission of the instructor; recommended: 304.
- 405. American Theatre and Drama.** **3 cr.**
Survey of the major American theatrical movements and dramatic literature from the Colonial period to the present with emphasis on the twentieth century. Playwrights, designers, and theatrical companies are studied as reflections of American culture.
- 406. American Public Address.** **3 cr.**
Examines the interrelated impact of verbal communication and significant political issues in American history.
- 407. Stage Directing.** **3 cr.**
Studies principles, theories, and practices involved in the staging of a play for performance, emphasizing problems of staging and interpretation confronting the director. Enrollment by instructor's permission only. Prerequisite: 190.
- 409. Hearing and Audiology.** **3 cr.**
This course will consider the nature of sound, the process of hearing, and hearing impairment. The different types, causes, and the measurement of hearing impairment will be discussed. Exposure to audiometric testing will also be available. Prerequisite: 203 or permission of the instructor.
- 410. Speech Problems for the Classroom Teacher.** **3 cr.**
This course focuses on the speech problems encountered in the classroom. Emphasis is placed on the recognition, and remediation of those speech problems. The classroom teacher will be exposed to the speech therapy program in the schools as well as to the teacher's role in speech remediation in the classroom. Prerequisite: 203 or permission of the instructor.
- 419. Oral Communication of Biblical Literature.** **3 cr.**
A course devoted to the consideration of the Bible in terms of the spoken language with its accompanying oral interpretative connotations and techniques. Prerequisite: 301 or permission of the instructor.

420. Speech Problems of the Exceptional Child.**3 cr.**

This course will investigate the speech and language development, speech problems, and speech remediation of the mentally retarded, brain injured, aphasic, learning disabled, and cerebral palsied child. The role of other professionals, in addition to that of the speech pathologist in speech remediation, will be explored. Prerequisite: 203 or permission of the instructor.

421. Independent Study.**1-3 cr.**

The student will work on a selected project under the supervision and guidance of a faculty member. Prerequisite: Permission of the instructor and the department chairman.

422. Speech Pathology Clinical Practicum.**3 cr.**

Provides an opportunity for active participation with professionals in their work in varied settings. For Speech Pathology concentration majors only. Written permission of department chairman required.

Department of Theology

Chairman: Rev. Charles J. Fenner, C.S.Sp., Ph.D.

Duquesne's Department of Theology affirms that the academic study of man's religious experience is essential to a complete education of man. The Department fulfills its role in theological studies by the pursuit of the following aims: 1.) it emphasizes Catholic Theology, in brotherly dialogue with other Christian traditions, non-Christian traditions and Judaism, as the key element in Duquesne's commitment to Catholic education on the university level; 2.) it acknowledges the fact of man's universal search for religious meaning and experience, and seeks not only to offer the possibility of a study of the varying approaches to religion witnesses in history, but also to place Catholic Theology in communion with that quest; 3.) it aspires to a fruitful encounter with other university disciplines, since the department is convinced that theology's concerns are related to all vital human issues, some of which other university disciplines explore.

Accordingly, the department has organized its courses into three divisions: Biblical Studies, Christian Studies, and Selected Religious Studies.

REQUIREMENTS FOR THE MAJOR

The major program consists of a minimum of 27 credits beyond the 100 level. These must include 201, 213, 214, 220, 498; the remaining credits will be chosen in consultation with the student's advisor.

REQUIREMENTS FOR THE MINOR

A minor consists of four courses beyond the 100 level. The department has also prepared suggested sequences which may be helpful to a student wishing to concen-

trate in a certain area of theology; e.g., Biblical Studies, Roman Catholic Theology, World Religions, Religion and Culture, Christianity in History, etc. These sequences are available in the department upon request.

COURSE INFORMATION

The numbering of the course indicates the level of approach.

- 100 These courses are of the basic, survey type, wherein emphasis is on breadth rather than on depth, and serve as background for other courses.
- 200-300 These courses treat of subject matter in a specific area of theology and in greater depth than in the 100 category.
- 400 Selected topics are dealt with at a more advanced level; independent research is required.

BIBLICAL STUDIES

- 114. Interpreting Bible.** 3 cr.
This course presents the tools necessary to understand an ancient literary work and affords a unified view of the historical events of the Old and New Testaments that are essential to an understanding of Jewish and Christian faiths, as well as the prominent religious experiences reflected in these events as interpreted by the biblical writers. Practical interpretation of biblical passages is stressed and ample exercises are provided.
- 213. Special Introduction To The Old Testament.** 3 cr.
A presentation of the Old Testament writings in their dynamic context of culture, politics, geography as well as an introduction to their literary modes, theologies and themes.
- 214. Special Introduction To The New Testament.** 3 cr.
The books of the New Testament are studied from the point of view of their literary makeup, historical origins and testimony, and theological content. Included are practical approaches in interpreting key passages of the New Testament.
- 313. Biblical Archaeology.** 3 cr.
A survey of the history of emerging civilization as revealed by archaeology, focusing principally on Palestine and the Ancient Near East. A general introduction to the techniques of archaeological investigation is included.
- 321. Jesus In The Gospels.** 3 cr.
A presentation of the portrait of the person of Jesus as evidenced in the Gospels.
- 413. Theology Of The Old Testament.** 3 cr.
This course examines the various books or blocks of writings in the Old Testament as to their theology; it attempts to draw together and present the major themes, motifs, and concepts of the Old Testament; and studies the relationship between the Old Testament and the New Testament.
- 414. Theology Of The New Testament.** 3 cr.
Major theological traditions of the New Testament are presented. Emphasis is given to the diversity of Christian belief and practice as well as to the underlying unifying principles of the early Christian experience. Advanced techniques of biblical interpretation are employed throughout the course and the student is given the opportunity to practice such techniques.

CHRISTIAN STUDIES**A. Christian Studies In General.**

- 140. Christian Understanding of Man.** 3 cr.
A study of man from a Christian point of view.
- 260. Origins of Protestantism.** 3 cr.
An introduction to the thought of Reformers Luther, Zwingli, Calvin, Wesley, and the Anabaptists.
- 274. Church History I.** 3 cr.
Selected topics of Ancient and Medieval Church History.
- 275. Church History II.** 3 cr.
Selected topics of Modern Contemporary Church History.
- 351. Sexuality, Sex, and Morality.** 3 cr.
The purpose of this course is threefold: What is sex? What is sexuality? How does a person morally integrate these two values?
- 352. Value of Human Life and Current Ethical Problems.** 3 cr.
It sets forth the moral value that should be attached to human life and applies this established moral value to some current ethical problems: Abortion, Genetic Engineering, Euthanasia, and War.
- 361. Questions in Protestant Theology.** 3 cr.
An analysis of current issues in Protestant Theology, e.g., the authority of Scripture, the mission of the Church, the relationship between the historical study of the Gospels and dogmatic Christology, the question of God-in-process.
- 370. Early Christian Thought.** 3 cr.
A study of the early Christian thinkers with emphasis on the Apologists, Origen, Athanasius, the Cappadocian Fathers, Tertullian, and Augustine.
- 470. Christian Mysticism.** 3 cr.
A study of the manifold Christian experiences of mysticism (i.e., experiential contact with God) as seen in famous exemplars of mystical experience, e.g., Jesus Christ, Paul, Ignatius of Antioch, Augustine, John Ruysbroeck, Catherine of Siena, Theresa of Avila, John of the Cross, Venerable Libermann, Charles de Foucauld, Theresa of Lisieux, Evelyn Underhill.
- 471. Eastern Christian Theology.** 3 cr.
A study of the main theological developments in the Eastern Church and of their interpretation in Eastern Orthodoxy.

B. Roman Catholic Theology.

- 106. Rational Foundations of the Catholic Faith.** 3 cr.
An investigation of the reasonableness of the Catholic Faith.
- 201. Introduction to Theology and Theological Method.** 3 cr.
An inquiry into the resources of theology (Faith, Revelation, Inspiration and Church Teaching), the approaches to theological study, and the ways of theological thinking.
- 202. Catholicism.** 3 cr.
An explanation of the major beliefs and practices of Roman Catholicism.

- 220. The Mystery of Christ.** 3 cr.
Study of the nature and meaning of Christ in their historical and contemporary dimensions.
- 230. The Church.** 3 cr.
A study of the Christian community of believers in its origins, some of its major historical and dogmatic emphases and experience, and its contemporary understanding of itself.
- 242. Contemporary Theological Issues.** 3 cr.
Various theological developments in an era of renewal, reevaluation, and cooperation are examined. Current issues will be discussed.
- 250. Moral Perspectives in Human Development.** 3 cr.
Presentation of the values governing the moral development and formation of human person.
- 256. God and His Meaning.** 3 cr.
This course presents a theological understanding of the problem of God and a study of man's seeking an understanding of the Divine Being. It includes a consideration of the responses of various religious and philosophies. Its main thrust, however, is to investigate the origins and development of the theology of God in the Judaeo-Christian traditions with special focus on the Catholic tradition.
- 301. Marriage.** 3 cr.
A personally-oriented and practical treatment of the marital union seen in its theological, psychological, and sexual aspects; as a bond of love, as a Sacrament, and as a human fulfillment.
- 330. The Theology of Evangelization.** 3 cr.
A study of the missionary aspect of the Church, including the Church's missionary role in the liberation of all men.
- 331. The Church in the Modern World.** 3 cr.
In light of Vatican II, an analysis of the Church's role in the development of man today and in offering solutions to present problems of humanity.
- 335. The Theology of the Sacraments.** 3 cr.
A theological reflection on the sacramental nature of Christian worship. Investigation is done into man's natural need to concretize his beliefs and sentiment, with special and extended study of the Christian sacraments in Catholic tradition.
- 442. Theological Anthropology.** 3 cr.
A study of man in his unique dignity as image of God and as responsible for the development of the universe, in his experience of sin and alienation, in his liberation by divine grace given through his union with the Risen Christ.
- 475. Theology and Catechesis.** 3 cr.
This course examines the principal theological, pedagogical themes of modern religious education, the place of catechesis in the ministry of the Church and offers an introduction to the historical background of the contemporary catechetical renewal.
- 498. Seminar.** 3 cr.
A critical analysis of selected topics and books by students under the direction of a faculty member. Open to juniors and seniors with a major or minor in theology.

SELECTED RELIGIOUS STUDIES

- 180. The Phenomenon of Religious Experience.** 3 cr.
The course examines mankind's universal experience of religious realities. It seeks to explore the way the divine is sensed and responded to, to discover what is common in all religious experience, and to discern differences in external response.
- 241. Studies in Black Theology.** 3 cr.
A study of the literature and the content of Black Theology and Religion as it has developed in America, the Carribean and on the African continent. Emphasis will be given to American Black Theology and religious experience.
- 245. Religion and Culture: Some Personal Dimensions.** 3 cr.
A study of the influence of religion on the individual's experience in work, leisure, love, art, dying and death, etc.
- 280. World Religions.** 3 cr.
The history, comparative theology, ritual, and contemporary influence of the world's major religions.
- 283-284. Jewish Thought and Religion.** 3 cr.
A survey course of Jewish Theology and Ethics as delineated in the Bible, the Talmud, and in medieval and modern Jewish thinkers.
- 342. Religion and Social Issues.** 3 cr.
A study of the influence of religious convictions in confronting major social issues of today's world, e.g., population growth, famine, ecology, liberation and revolution, media of communications, etc.
- 343. Religious Impact of Secular Thinkers.** 3 cr.
A study of the effect modern writers (e.g., Herbert Marcuse, Marshall McLuhan, Hugh Hefner, Alvin Toffler, etc.) have had on the religious consciousness and behaviour of today.
- 345. Women in Religion.** 3 cr.
The role and position of women in Hinduism, Islam, Judaism, and Christianity.
- 372. Religious Themes in Literature.** 3 cr.
An exploration of the relationship between the imagination and the intellect, the artistic and the scientific, in the literary expression of fundamental theological concepts. The course examines significant literary works—past and present, English and continental (in translation)—of Western man as they explicitly or implicitly express man in his relationship to himself, other men, and God.
- 373. Religion in America.** 3 cr.
Analysis of the role of religion in the discovery, colonization, constitutional development, immigration trends, and growth of the American republic.
- 481. Islam.** 3 cr.
A study of the origin and the historical development of Islam, its theology, institutions, and practices.
- 482. Religions of India.** 3 cr.
An introduction to the basic concepts of Hinduism and Buddhism: their origin, development, and interrelationship.
- 492. Reading Seminar: Selected Topics.** 1-3 cr.
An analysis of selected books and topics by students under the direction of a faculty member.

School of Business and Administration

HISTORY

The School of Business and Administration was established in 1913 as the School of Accounts and Finance. The rapid growth of the School necessitated a constant broadening of the curriculum until it covered all business subjects of fundamental importance. In 1931 it was designated the School of Business Administration and, with this change, definitely became a professional school of business administration. In 1971 the name was changed to the present designation to indicate broader preparation for activity in organizations of all types.

PHILOSOPHY AND OBJECTIVES

In accord with the educational philosophy and objectives of the University, the School of Business and Administration aims to assist the student in his development of the natural and supernatural virtues. The general aim is to provide through the media of instruction and related collegiate activity the facilitation of purposeful character, intellectual accomplishment, emotional and social maturity, and professional efficiency.

The School of Business and Administration has the professional responsibility of developing in the student such knowledge of business principles, procedures and problems as will enable him to become a self-sustaining member of the business community, aware of his social and public responsibilities and dedicated to the enrichment of the resources for worthy living. It seeks to produce graduates who, upon entering their chosen careers, will be effectively prepared to discharge their obligations to God, to their community, and to themselves as intellectual and moral beings. The School attains this objective by guiding the student through a cultural core program, through a business core program, through an elective area of advanced business subjects chosen on the basis of professional interests, through co-curricular and extra-curricular activities, and through established personnel services.

As a division of the University, the School of Business and Administration is obviously dedicated to promoting those University aims and objectives contained in the general statement.

The professional objective of the School of Business and Administration is to produce graduates who have acquired and developed:

1. An appreciation of the importance of initiative and who consequently are willing to assume responsibility, work efficiently and harmoniously with others, and adjust to changing circumstances.

2. A respect for logical thinking and who strive energetically, therefore, to develop the capacities for analytical reasoning through the vigorous and orderly application of ethical and technical principles to problem solving.

3. An understanding of the personal and professional value of effective communications and a cultivation of their capacities for speaking and writing clearly and concisely.

4. An awareness of the important role of quantitative measurements in today's business and who have become skilled in the interpretation of mathematical, accounting and statistical data.

5. Sufficient knowledge in a professional area so that they can assume positions of responsibility with a background of learning-method and learning-impulse that will enable them to progress rapidly.

DEGREE

The School of Business and Administration grants the degree of Bachelor of Science in Business Administration. This degree may be awarded to those who satisfy the entrance requirements and complete successfully the School's degree program.

BUREAU OF RESEARCH AND COMMUNITY SERVICES

Activity complementing direct instruction takes place in four ancillary units grouped under the Bureau of Research and Community Services. All function to provide students and faculty with an opportunity for professional development as well as to provide services to the University and the community at large.

BUREAU OF RESEARCH

The Research Bureau carries out an independent research program, and cooperates with divisions of the School in facilitating the research of individual faculty members.

Through the University Press, the Bureau issues monographs and other publications. From time to time contract research is undertaken for business, community, and governmental agencies, insofar as this may fall within its academic aims of discovery and dissemination of knowledge.

The Bureau is a member of the Association for University Business and Economic Research, and maintains an interchange of publications with similar organizations in other universities throughout the country.

CENTER FOR ADMINISTRATION OF LEGAL SYSTEMS

The Center serves as the focal point for research activity in the administration of law. Its approach encompasses the outlook and makes use of the investigative techniques of the physical scientist, the educator, the lawyer, the social scientist, the behavioral scientist, and the administrator. Present research activities include studies of the interactions of law and psychology, the administration and management of the courts, educational programs in fundamentals of the law for youth.

The Center also serves as the coordinating agency for education and training programs of a non-credit nature for persons currently employed within the legal system. Such programs are tailored to meet the needs of specific groups and agen-

cies. The objectives, content, time and length of all programs are cooperatively determined with the agency involved. The Center calls upon professionally trained practitioners from the local community as well as full-time faculty to instruct in these programs.

CENTER FOR ECONOMIC EDUCATION

The Center is charged with the responsibility of initiating and promoting economic education in the society at large. More specifically it develops and coordinates economic education within the Western Pennsylvania and Tri-State area where the primary thrust of the Center focuses on upgrading economic literacy and teaching competency in the school systems of the area.

CENTER FOR INTERNATIONAL MANAGEMENT

The objective of the Center is to develop a better understanding of the American involvement in international affairs and business and in management abroad through teaching and research; it is achieved by an interdisciplinary approach.

The areas of current research focus are:

1. Trade expansion between the USA and Eastern Europe.
2. Management in foreign nations.
3. Problems in international business.
4. International economic development with a stress on interaction among developed countries, and on the relationship developed countries—less developed countries.
5. International political and legal issues.

The Center has no teaching program of its own; most of its staff are faculty members from various schools and departments of the University or visiting foreign professors.

DIVISION OF CONTINUING EDUCATION

The Division conducts management training programs for industry ranging from the foreman level up through executive personnel, touching every phase of management to make the individual a better rounded person in meeting the current demands of business.

Also administered are non-credit programs which consist of courses in business and administration or special areas; these courses are offered for the continuing education of adults in the community.

STUDENT ORGANIZATIONS

Several organizations, limited to students in the School of Business and Administration, exist for the promotion of the scholarly and professional interests of members.

The Zeta Chapter of Beta Gamma Sigma, national honorary fraternity for accredited schools of the American Assembly of Collegiate Schools of Business, is established at Duquesne University. Membership in this honorary fraternity is limited to juniors in the highest five per cent of their class and to seniors in the highest 10 per cent of their class.

The Beta Alpha Phi Fraternity is the honorary scholarship society of the school.

Phi Chi Theta is a national professional commerce sorority.

The Student Accounting Association provides for the interests of those who intend to become accountants.

American Marketing Association, the student chapter, affords membership to students whose major interests include salesmanship, marketing, advertising, transportation, or foreign trade. A selected group of seniors is permitted, under faculty supervision, to participate in the meetings of the Sales Executives Club of Pittsburgh and the senior chapter of the A.M.A.

Omicron Delta Epsilon, a national honor society in Economics, is open to all students specializing in studies in Economics. The society is open to those having an overall academic average of B in their Economics courses.

Delta Sigma Pi, a national professional business fraternity, is represented by *Theta Rho* chapter.

DIVISIONS AND PROGRAMS

The School of Business and Administration is comprised of three Divisions: Quantitative Science; Behavioral Science; and Economic Science.

A student entering the School of Business and Administration is expected to state to his advisor his career objective along with his academic area of concentration, the latter of which can be several of the junior and senior courses indicated in the three Divisions. The student's proposed curriculum must, of course, include the University requirements and Business Administration Core requirements as indicated in the illustrations set forth in this catalog. Consistent with his stated career objective and with the concurrence of his advisor, the student is free to select any junior and senior courses from the School of Business and Administration curriculum to complete the 15 hours required for graduation. The single exception to this is the student who selects Accounting as his area of concentration. The regulations for certification in Accounting make this program very rigid; this is dealt with in the paragraphs following the Sample Program.

The faculty advisor in the School of Business and Administration plays an extremely important role in the academic guidance of each student. Because of this, each student is permitted to select his own advisor based on personal knowledge and available biographical sketches.

FOUR-YEAR SAMPLE PROGRAM

Freshman Year			Junior Year		
Course No.		Credits	Course No.		Credits
101-102	Analytic Methods	6	204	Principles of Marketing ..	3
101-102	Introductory Accounting .	6	204	Business Finance	3
101	Economic Geography	3	301-302	Analytic Methods	6
107	Economic Development ..	3	311	Money and Banking	3
	Philosophy Electives	6	301 or 302	Economics	3
	English Electives	6	311	Concentration Area	
				Electives	6
				Liberal Arts Electives	6
		30			30

Sophomore Year			Senior Year		
Course No.		Credits	Course No.		Credits
201-202	Analytic Methods	6	403	Human Relations	3
211-212	Principles of Economics ..	6	409	Executive Action	
201	Principles of Management	3		Simulation	3
203	Managerial Accounting ..	3		Theology Elective	3
251	Legal Process	3		Science Elective	6
	Liberal Arts Electives	9		Concentration Area	
				Electives	9
				Liberal Arts Electives	6
		30			30

Students concentrating in accounting should take Accounting 101, 102, 201, 202, 305, 309-310, 411, 451, 461, and 463. In addition to Legal Process 251, they must take at least one of these courses in Law: 353, 354, 355. It is recommended that the student achieve an overall B average in Accounting 101-102 before attempting Accounting 201 and a minimum grade of C in both 201 and 202 before attempting the 300 and 400 level courses.

Students enrolled in the accounting program are encouraged to take the A.I.C.P.A. Level II Achievement Test. This will normally be taken in the Spring Semester during which Accounting 310 will be completed.

Three credits in theology are required for Catholic students. Others may take theology or may substitute three credits in the Departments of History, Philosophy, Political Science, Psychology, or Sociology.

COURSE DESCRIPTIONS

Division of Quantitative Science

Chairman: Robert G. Borman, M.B.A., C.P.A.

ANALYTIC METHODS CURRICULUM

All students in the undergraduate School of Business and Administration are required to take a three-year, 18-credit sequence in Analytic Methods, which is concerned with the application of mathematics, statistics, and electronic data processing to the analysis of business and economic problems. Two programs are available: the regular program and an honors program.

The objective of the regular program is to increase the student's knowledge and understanding of the uses of mathematics, statistics, and computers as aids in decision-making. The student is required to do considerable problem-solving. The regular program is intended for the majority of students who will not be specialists

in management science or operations research.

The honors program emphasizes a mathematical approach and is intended for students who have a stronger interest in and aptitude for mathematics. This program will cover essentially the same topics as the regular program, but in more depth and from a more theoretical viewpoint. The honors program provides the student with adequate preparation for advanced study in management science and operations research.

101, 102. Introductory Analytic Methods.

3 cr. each

Selected topics from algebra, analytic geometry, and calculus are covered. Among the topics are: linear, parabolic, hyperbolic, exponential, and logarithmic functions; fitting functions to empirical data; instantaneous rate of change and the difference quotient; integral calculus and the area under a curve, arithmetic and geometric progressions, compound interest, and an introduction to computers and computer programming. Problem work is related to a business and economics setting. Must be taken in sequence: 101, 102.

201, 202. Intermediate Analytic Methods.

3 cr. each

This sequence includes the basic ideas of descriptive and inductive statistics. Among the topics covered are: frequency distributions; measures of central tendency; measures of dispersion; sets and set operations; elementary probability theory; probability distributions; sampling distributions; statistical estimation; testing of hypotheses; time series analysis; simple linear regression and correlation. Prerequisites: Analytic Methods 101, 102.

301, 302. Advanced Analytic Methods.

3 cr. each

This sequence stresses the model building approach in the analysis of business and economic problems and introduces a number of operations research techniques. Topics included are: matrices and vectors; linear programming; transportation problems; multiple regression and correlation; statistical decision theory; Monte Carlo methods and simulation; and optimization models using numeric methods. Prerequisites: Analytic Methods 201, 202, and all 200-level required business courses.

401. Operations Research.

3 cr.

Advanced treatment and analysis of operations research techniques and methodologies, including: Linear programming, Monte Carlo simulation, Markov processes, dynamic programming, queuing problems, sequencing and coordination in networks, competitive bidding and decision-making, deterministic and probabilistic inventory and production problems, and the design of research experiments. Prerequisites: Analytic Methods 301, 302.

FINANCE CURRICULUM

204. Business Finance.

3 cr.

The aim is to combine the descriptive study of external sources and processes of financing with the tools of financial analysis and to apply them to financial decision making. Primary attention is given to short and long-term financing and to funds-flow approaches, with secondary emphasis placed upon securities markets, financial projections, and financial-structure planning. Prerequisites: Acct. 101, 102.

308. Financial Markets.

3 cr.

A broad introduction to the markets for lending and borrowing of capital, both short- and long-term, together with discussion of the institutions serving as sources, intermediaries, and users of funds. Emphasis is placed on interrelationships among finan-

cial institutions participating in these markets, and among the various markets. Prerequisite: Fin. 204.

310. Investment Analysis.

3 cr.

This course is a case method approach to investment problems of individuals of various financial institutions. It provides a comprehensive grounding in all types of investment analysis, including interpretation of statements, construction of pro-forma reports, preparation and use of industry norms, and cash and capital budgeting. Reliance is placed upon use of prepared cases and upon original data assembled by the students. Special emphasis is placed upon methods of evaluated results of such analyses and projections, and recognizing their short-comings. Prerequisites: Fin. 204, Securities Analysis 417 or consent of instructor.

311. Money and Banking.

3 cr.

The primary aim of this course is to give students an understanding of the influence of money and the activities of monetary institutions on price levels, levels of income and employment, and the rate of economic growth. The first half of the course is devoted largely to study of the evolutionary development of money and the banking system and of the structure and operations of the present United States monetary system. Although attention is concentrated on the domestic operations and policies of the commercial banking system, the significant role of other private and governmental financial institutions is emphasized and occasion is taken throughout to illustrate international monetary relationships. Prerequisites: Econ. 211, 212.

315. Risk Management.

3 cr.

A study of the broad spectrum of risk exposures in business enterprise, with attention to the need for identifying these in terms of nature and magnitude. Methods of alleviation, avoidance, and insurance are studied. Emphasis is placed not only on the traditional forms of insurable hazards, but also upon implicit risks such as those of loss in market value of inventories, use value of plant and equipment, and liquidation value of receivables.

321. Corporate Financial Problems.

3 cr.

A study of the financial problems unique to corporations, using the case method. Topics will center around the various types of securities and their issuance, conversion and repayment; direct placements; mergers, acquisitions, spin-offs, and sales of assets; determination of policy with respect to surplus, reserves, dividends, pension funds, and executive compensation; effects of taxation; and cash management, capital budgeting, and financial-structure planning. Prerequisites: Fin. 308, 310.

415. Financial Commercial Transactions.

3 cr.

A study of the financial aspects of various types of business transactions such as sales, loans, leases, consignments, shipments, and storage; also of the financing of the assets involved such as goods, receivables, plant, equipment, and intangibles. Particular attention is given to loans made by commercial banks, factors, and finance companies from the point of view of both lender and borrower. Use is made of case problems in the field of working-capital management. Prerequisite: Fin. 204.

416. Credit Management.

3 cr.

Consideration of the problems involved in extension of short-term and installment commercial credit by financial institutions, manufacturers, and wholesalers. Case problems are used exclusively in developing principles applicable in establishing terms of sale, approving credit limits, handling difficult collections, working out of insolvent situations,

and evaluation of data found in mercantile-agency reports and similar sources. Prerequisites: Fin 310, 415.

417. Security Analysis. 3 cr.

An intensive study of analytic techniques applicable in selection of securities of corporations in various industries, and of municipal and other governmental units, for purposes of investment. Emphasis is divided between measurements of intrinsic values and of market conditions. Prerequisites: Fin. 308, 310.

420. Life Insurance. 2 cr.

A study is made of the risks of death and longevity as they occur in personal and business situations. Analyses are made of various forms of life-insurance and annuity contracts and their uses, with emphasis upon their functions as instruments of estate creation and administration. Uses of insurance in connection with partners and key men, and in connection with bank loans, are explored. Attention also is given to accident and health coverages, group plans, pensions and regulation of the industry.

423. Property and Liability Insurance. 2 cr.

A study of business and personal applications of casualty, fire, and liability coverages in the form of both insurance and bonding, including the fields of workmen's compensation; landlords' and tenants' liabilities; burglary, robbery, and theft; automobile; credit and title insurance; fire and related lines; fidelity and surety bonding; and relevant aspects of inland and ocean marine.

425. Case Problems in Finance. 2 cr.

An integrated study of financial topics through the medium of case problems. Special emphasis is given to capital-expenditure policies, long- and short-term financing, credit control, consolidations and mergers, and analysis of financial statements. Seniors only.

428. Real Estate Financing. 3 cr.

A study of the problems involved in financing residential, commercial, and industrial real estate from the points of view of both owner and lender. Methods of financing covered include use of individual and corporate equity; loans secured by mortgages; land contracts; sale-and-leaseback arrangements; and cooperatives, syndicates, and real-estate trusts. Attention is given to procedures for originating, servicing, and foreclosing loans and mortgage arrangements by principals, agents, and mortgage bankers. Case problems are used to illustrate determination and implementation of policies by individuals and financial institutions for making investments in the loans against real property, and also to illustrate the effects upon corporate working capital of ownership of real estate. Special topics treated include tax considerations, construction and improvement loans, financing of shopping centers and residential developments, and the effects of governmental subsidies and assistance programs. Prerequisite: Fin. 204.

450. Seminar in Finance. 3 cr.

Topical emphasis will vary, depending upon current developments and the needs and interests of students. Required of finance majors.

ACCOUNTING CURRICULUM

CPA REQUIREMENTS

Students who desire to become certified public accountants in Pennsylvania and who have been graduated from a four-year program in a college approved by the

State Board of Education may sit for the CPA examinations. The degree program of the University is so approved.

Graduates may sit for the CPA examination in other states, among which are Colorado and New Jersey.

101, 102. Introductory Accounting.

3 cr. each

An introduction to the language of accounting, basic accounting concepts and brief exposure to recording financial information. An extensive study is made of accounting information for management decisions. Laboratory attendance to two hours per week is required.

201, 202. Intermediate Accounting.

3 cr. each

This course is primarily concerned with an investigation and analysis of the accounting problems and practices of the corporation, with detailed study of the component elements of the balance sheet and income statement. Basic topics are: accepted and alternative methods in the accounting cycle; financial statements, their form, content and use; accounting problems of the corporation, detailed analysis of the balance sheet accounts, determination of net income; statement of source and uses of working capital. Prerequisite: Acct. 101-102.

203. Managerial Accounting.

3 cr.

A study of the technique involved in the gathering, recording and interpretation of accounting and statistical data used in the solution of internal problems of management. Some of the topics covered are: construction, analysis and interpretation of reports; establishment of operating and financial standards; measurement of managerial performance; use of budgets in managerial control; use of cost data and interpretation of cost reports; use of quantitative data in the formulation of policies; consideration of various aspects of Federal, State and local taxes and their effect on managerial decisions. Prerequisites: Acct. 101, 102.

305. Advanced Accounting.

3 cr.

This course applies fundamental theory to a number of important activities in business. Activities studied are: partnerships, special sales procedures, consolidations and fiduciaries. Prerequisites: Acct. 201-202.

309, 310. Cost Accounting.

2 cr. each

Basic cost accounting procedures are discussed from the following viewpoints: cost principle; cost determination; cost control; cost analysis. Topics treated include cost terminology, planning and control techniques, and development and application of overhead rates. Cost behavior patterns are studied in conjunction with development and application of overhead rates. Standard costing, job order costing, process costing and joint products, by-product costing are treated in detail. The subject of budgeting is dealt with extensively with emphasis on capital budgeting. Methods of judging managerial efficiency, inventory control and management control systems are also stressed. Prerequisites: Acct. 201, 202 or 203.

411. Auditing.

3 cr.

Standards and procedures employed by auditors in the examination of financial statements for the purpose of rendering an opinion are studied and evaluated. Emphasis is placed on theory and philosophy of auditing; however, case problems are used to demonstrate the application of the principles studied. Prerequisites: Acct. 202, 305.

451. Introductory Income Tax Accounting. 3 cr.

This course is a study of basic tax and procedure affecting primarily individuals and to a lesser extent partnerships and corporations. Principal topics: returns, rates, exemptions, income, deductions, sales and exchange of assets, and credits. Emphasis is placed on problems to demonstrate the application of the principles studied and use is made of official forms for demonstration purposes. Prerequisite: Acct. 202 or 203.

461. Seminar in Accounting. 1 cr.

This course is designed to develop a student's ability in technical expression, deepen his understanding of accounting theory, and acquaint him with contemporary accounting problems and literature. Students are made acquainted with the philosophy and methodology of research and required to prepare a research paper. Prerequisite: Acct. 305.

463. Business Information Systems. 2 cr.

A course designed to cover common-language machines and integrated data processing. It entails survey and design techniques for setting up systems and procedures to satisfy the flow-of-information objectives of modern-day management. The course presumes a familiarity with basic computer programming as covered in the Analytic Method sequence. Prerequisites: Acct. 201, 202.

Division of Behavioral Science

Chairman: Serge Grosset, Ph.D.

PROGRAM GUIDE FOR STUDENTS

The present combination of required courses and free electives gives the student a solid foundation in business and, at the same time, allows him to follow his inclination in a special field of endeavor. At the same time, the greater the freedom of choice, the greater the need for helping the student in selecting courses in a meaningful way.

Students should be aware that they can use this freedom either:

1. To broaden their cultural background by expanding in many different fields of knowledge, or
2. To establish, with the help of their advisor, a background of specialized knowledge in the field in which they have their strongest interest.

Several Study Programs—combining a concentration in Business (15 credits) with a judicious choice of electives from the College (21 credits)—are given as illustrations of the flexibility and the depth possible under the present program. Presently Study Programs are offered in:

Industrial Relations
Law Administration
Production
Transportation & Traffic

International Business
Marketing Management
Public Administration
Environment & Ecology

The listing of these Study Programs is only indicative, not inclusive; others may be structured, and the suggested areas can be modified according to the occupational objectives and preferences of the student.

LAW ADMINISTRATION CURRICULUM

This curriculum is designed to prepare professionals to aid in the solutions of one of society's most critical problems, that of the administration of legal systems. Future executives in court management, correctional institutions, and control systems (law enforcement) receive a broad interdisciplinary educational experience with the basic core coursework in the School of Business and Administration.

Students in this program should take these courses:

- 453 Administration of Legal Systems
- 311 Behavioral Science
- 311 Personnel Management
- 411 Public Administration, and either
- 309 Administrative Organization, or
- 463 Business Information Systems.

To supplement the basic core, students in the Law Administration sequence select the following or related courses in satisfaction of the School of Business and Administration requirement regarding liberal arts electives.

- 478 Youth and Drug Abuse
- 002 Drug Abuse
- 328 Psychology of Personality
- 352 Abnormal Psychology I
- 353 Abnormal Psychology II
- 334 Delinquency
- 335 Criminology
- 336 Social Control
- 337 Corrections

Other coursework may be appropriate to fit a student's career objective. Counselors and school officers should be consulted.

PRE-LEGAL PROGRAM

The curriculum of the School of Business and Administration meets the requirements for registration for general purpose of the State Board of Law Examiners in Pennsylvania, and of the State Education Department of New York.

Coursework in the various areas of the School of Business and Administration provides good preparation for the professional study of law.

251. Legal Process.

3 cr.

An introductory course exploring the nature of law, its sources, its relation to society and government; relation of the judicial to the executive and legislative functions; law as an instrument of social change and control; understanding of the legal rights and duties of persons. Acquaintance with areas of legal concern to the administrator such as labor, environmental controls, products liability, anti-trust concerns such as pricing and mergers.

- 353. Contract.** **3 cr.**
Study of the law pertaining to the formation of contracts, the legal requisites of an enforceable agreement, the transfer of contractual rights and duties, the discharge of contracts; the relationship between principal and agent. Prerequisite: 251 Legal Process.
- 354. Commercial Transactions.** **3 cr.**
Study of the provisions of the Uniform Commercial Code with reference to the nature and legality of sales of goods, the formality of the sales contract, transfer of title to goods, warranties; nature and kinds of commercial paper, requisites and meaning of negotiability methods of transfer. Prerequisite: 251, Legal Process.
- 355. Business Organizations.** **3 cr.**
Consideration of the nature, creation, and dissolution of the proprietorship, various types of partnerships, other unincorporated organizations, and the corporation. Duties, rights, remedies, and liabilities of owners and managers are studied. Prerequisite: 251 Legal Process.
- 453. Administration of Legal Systems.** **3 cr.**
Study of the legal system and the procedures by which legal rights and duties are effectuated and enforced; current problems and issues related to the system in the attainment of its objectives; administrative problems in the legal system. Prerequisite: 251 Legal Process.

MANAGEMENT CURRICULUM

- 201. Principles of Management.** **3 cr.**
This course represents an initial introduction to the essential principles of management centered around the concept of management being a basic process which is distinct and applicable to all enterprises. Planning, organizing, actuating, and controlling comprise the fundamental functions of management, making up the management process. These functions constitute the framework around which this course is built. Emphasis is given to planning which is rapidly growing in managerial importance. Decision making, managerial creativity and the art of management are thoroughly developed.
- 301. Behavioral Science.** **3 cr.**
This course is an introduction to the scientific study of behavior. It incorporates concepts from the disciplines of anthropology, psychology, sociology, economics, law, and political science, as well as from the newer fields of organization theory, game theory, and decision theory. This interdisciplinary approach to behavior provides an integrative framework for transfer to any organizational setting. Prerequisite: 201 Principles of Management.
- 308. Operations Management.** **3 cr.**
A follow up course to Principles of Management in which all important phases of management are developed. Topics such as purchasing, inventory control, motion and time study, plant layout, pricing, etc. are covered. An intermediate course to be used as a basis for further specialized treatment of management areas in the advanced courses. Prerequisites: 201 Principles of Management, 202 Advanced Analytic Methods.
- 309. Administrative Organization.** **3 cr.**
A course presenting organizational concepts as they relate to the operation of an enterprise. Line, staff, and functional relationships are thoroughly developed. Both formal and informal relationships are considered as they are developed and exist within a firm. Authority, responsibility, delegation, centralization and decentralization of control and

other related organizational problems are considered. Prerequisite: 201 Principles of Management.

311. Personnel Management.

3 cr.

A course presenting techniques of manpower management. Involves study of recruiting and screening techniques, training programs, merit rating, wage payment plans, safety, disciplinary programming, etc. Current practice is presented in the form of case material. Prerequisite: 201 Principles of Management.

314. Industrial Relations.

3 cr.

A course developed to present to the student historical knowledge of the labor movement, current status and importance in industry, and the legal status of labor governing the actions of management in a myriad of ways. Presents the role of labor, management and government in collective bargaining and current industrial relations policies and practices. Prerequisite: 201 Principles of Management.

403. Human Relations in Administration.

3 cr.

An advanced course treating of the human aspect as it is encountered in the industrial organization. Involves an analysis of behavioristic patterns of individuals as individuals and as members of work groups. Deals with motivation, goals, needs, frustrations, etc. as they relate to the industrial situation. Prerequisite: 201 Principles of Management and senior standing.

409. Executive Action Simulation.

3 cr.

A course incorporating the Games Theory Approach. The teaching techniques of Case Method and Role Playing are combined in a simulated business environment in which the students make the decisions affecting the conduct of a business. Participants are divided into teams with key corporate duties being assigned and several teams compete against each other in an attempt to operate the "firm" on the optimum profitable basis. Required of all seniors. Prerequisites: 201 Principles of Management and Senior Standing.

411. Public Administration.

3 cr.

This course introduces the student to the content of public management and to the work of the public manager at federal, state, and local government levels. It also compares and contrasts public and private management and links management theory and practice. Lecture-discussions and participative methods are employed. Prerequisite: 201 Principles of Management.

438. Wage and Salary Administration.

3 cr.

An advanced course involving a study of the major wage administrative problem. Wage evaluation programs are covered with emphasis placed on the point system and the factor comparison method. A study of wage payment plans and wage incentives comprises the second phase of the course. Merit rating and other areas related to the wage problem are also included. Prerequisite: 201 Principles of Management.

444. Collective Bargaining.

3 cr.

Study of the relation of federal and state legislation to collective bargaining; analysis of substantive issues and administrative aspects of collective agreements; specific provisions including adjustment of grievances; conciliation, mediation and arbitration; collective bargaining and public policy. Prerequisite: 201 Principles of Management.

MARKETING CURRICULUM

- 101. Physical and Economic Geography** **3 cr.**
This course examines the present and potential products of the world's major geographic regions. The course concerns itself essentially with man's utilization of natural resources in earning a living. Attention is given to the geographical foundations and operations of major industries including agriculture, manufacturing, extractive activities, and transportation. Principal domestic and world trade movements are analyzed.
- 204. Principles of Marketing.** **3 cr.**
The emphasis throughout this course is on problem solving and decision-making in marketing. The basis for the course is a systematic analysis of customer behavior, and the development of marketing policies and programs. Marketing strategy and designing a marketing mix are stressed to give the student an insight into these areas, and the reduction of risks is emphasized through the use of quantitative and qualitative market research techniques.
- 315. Marketing Problems.** **3 cr.**
This course employs the case method illustrative of typical marketing problems such as merchandising, advertising, selection of channels of distribution, and development of new products. These problems are analyzed as they affect different middlemen in the marketing structure including manufacturers, wholesalers, jobbers, brokers, agents, and similar functionaries. Theories of marketing are subjected to the test of practical examples so that the student may develop a more realistic grasp of the principles involved and the value of the practitioner's judgments. Current marketing developments are studied. Prerequisite: Mktg. 204.
- 322. Sales Administration.** **3 cr.**
An introduction to the fundamentals of salesmanship and the problems confronted by the sales manager. Topics include such areas as: Production planning, pricing, packaging, qualitative and quantitative market analysis, and specific sales management functions of selection, training, equipping, compensating, supervising, and controlling salesmen. Prerequisite: Mktg. 204.
- 406. International Business.** **3 cr.**
A study of the techniques of international trade. Emphasis is given to the contract, overseas equipment, customs procedure in this country and abroad, marine insurance, packing for overseas trade, financing exports and import shipments, foreign exchange and carriage of goods by air. Prerequisites: Mktg. 204, Econ. 211-212.
- 411. Marketing Research.** **3 cr.**
This course examines the means and methods business management uses to get the necessary information for decision making involving what to produce, how much to produce, and how to distribute goods that are produced. The various types of marketing research—consumer research, motivational research, market analysis, sales analysis and sales forecasting, product research, and advertising research—are studied in some detail. Prerequisite: Mktg. 204.
- 412. Transportation.** **3 cr.**
A comprehensive analysis of the historical evolution, operation and economic development of the railroads, motor carriers, water carriers and air carriers of the United States. The Interstate Commerce Act, with its amendments, and the public regulation, state and federal, of the various carriers will be emphasized. Prerequisites: Com. 204, Econ. 211, 212.

414. Traffic Management.**3 cr.**

This course deals with the organization and functioning of traffic departments of industrial concerns. Topics treated are: organization of shipping departments; car records for the control of private car lines; claims, routing, service and rating departments; regulations governing packing, shipping and sales; shippers' relations with carriers, freight and express tariffs; delays in transit; receipt and delivery of property. Intensive work in the rate structures of the United States will be an important item. Prerequisites: Econ. 211, 212.

Division of Economic Science

Chairman: Som Prakash, Ph.D.

ECONOMIC SCIENCE CURRICULUM**101. Elements of Economics.****3 cr.**

Economics 101 is an introductory course in economics intended to afford an understanding of how our economic system works, of the forces which affect the level, composition, and distribution of the output of the economy, and of the issues behind current economic problems. The course content will define concepts, provide background materials, and develop economic ideas necessary to an understanding of the policy issues constantly before a complex dynamic economy.

102. Introduction to Macro Economics.**3 cr.**

The emphasis is on the application of macro economic principles. A series of basic economic problems and issues will be examined in terms of an understanding of the basic problem. How society can achieve and maintain a full employment economy with reasonable economic stability.

213. Introduction to Micro Economics.**3 cr.**

The primary aim of this course is to enhance and deepen the student's understanding of the market mechanism and how this mechanism responds to various governmental policies. More specifically, this course should enable the student to apply micro economic reasoning to current public issues, and use benefit-cost methodology in analyzing government expenditures.

The above set of courses has been designed for non-business students. However, taking one course does not obligate the student to take any additional courses in the sequence.

105. Economics of Discrimination.**3 cr.**

The main interest of this course is the diagnosis of the nature and causes of the problem of social, economic and educational underutilization and underdevelopment of Black America. The course aims at the historic delineation of the factors responsible for this situation and the programs current and possible that may be utilized to improve the situation.

107. Economic Development of Europe and America.**3 cr.**

A survey of the evolution of western economic institutions and practices. Emphasis is

given to the origin of capitalism, the Commercial and Industrial Revolutions, the rise of the bourgeoisie and the spread of capitalism. A study is also made of the institutional development and productive growth of the United States economy.

211. Principles of Economics I.

3 cr.

The first course in economics for the student who plans to major or minor in economics. The course seeks to acquaint the student with concepts and the logical basis to economic reasoning. Emphasis is placed on understanding the behavior of households and firms under competitive and imperfectly competitive market conditions.

212. Principles of Economics II.

3 cr.

This course is primarily concerned with aggregative economic relationships. The theory of the determination of national income is developed and attention is given to the construction of national income accounts. Attention is given to monetary and fiscal policy and their implications. Prerequisite: Econ. 211.

301. National Income Analysis.

3 cr.

A conceptual analysis of national income theory, its tools, its basic principles and its social and economic significance. The course treats the macroeconomic method of economic analysis. It is concerned with explaining the development and nature of national income aggregates. The basic principles of national income theory are developed and explained in order to place into focus the operations of the American economy and the many problems relating to it. Prerequisites: Econ. 211, 212 or 101, 102, 213.

302. Price and Production Economics.

3 cr.

An intensive study of the theory of demand, production and distribution. In addition, recent developments in the theory of imperfect competition and oligopoly are carefully examined. Prerequisites: Econ. 211, 212 or 101, 102, 213.

312. Public Finance.

3 cr.

A study of the organization and management of government revenues and expenditures with emphasis on American practices and policies of the various levels of government. Welfare economics and benefit cost analysis receive heavy consideration. Prerequisite: 301 or 302.

402. Comparative Economic Systems.

3 cr.

A comparative study of capitalism, socialism, communism and other economic systems with emphasis on analysis rather than mere description of the economics of various countries. Prerequisites: Econ. 211, 212 or 101, 102, 213.

403. Urban Economics.

3 cr.

Urban economics is intended to afford an understanding of how the urban economy works, of the forces which affect the level, composition, and distribution of the output of the urban economy, and of the economic issues behind current urban problems. The course analyzes the processes, stages and determinants of urban economic growth and development. Urban economics focuses on the problems and policy in the urban economy: income inequality, manpower, local public finance, housing and land use patterns, and transportation. A particular emphasis of the course is to provide the student with the theoretical tools and show their application to the dynamic, complex urban economy. Prerequisites: Econ. 211, 212 or 101, 102, 213.

405. International Economics.

3 cr.

This course is an introduction to international trade theory and the principles of inter-

national monetary economics as well as foreign trade policies. Topics to be discussed include: the classical and neoclassical theory of comparative advantage, foreign exchange markets and balance of payments, adjustment mechanisms, analysis of the consequences of trade regulation and international liquidity problems. Prerequisites: Econ. 211, 212 or 101, 102, 213.

- 406. International Business.** 3 cr.
The course is offered by the Division of Behavioral Science.

- 413. Labor Economics.** 3 cr.
Analysis of the principles for wage and employment determination in contemporary American economy under non-union conditions as well as under collective bargaining. The institutional development underlying labor supply and demand is studied with direct emphasis on its impact on employment and production, on the general wage-level and on wage differentials, on the distribution of national income and on general social welfare. The course also includes a comparative study of problems in labor economics in American and other democratic countries. Prerequisites: Econ. 211, 212 or 101, 102, 213.

- 417. History of Economic Thought.** 3 cr.
Shows the development of economic thought from the Age of Mercantilism to 1890. Major emphasis is placed upon the writings of Mun, Petty, Quesnay, Smith, Ricardo, Malthus, Marx, Jevons, and the Austrian School. It offers a study of the fundamental concepts of the writers and the influence of institutional conditions upon their philosophy. Major emphasis is placed upon value and distribution theory as it developed. Prerequisites: Econ. 301, 302.

- 418. Modern Economic Theory.** 3 cr.
A brief review of classical tradition emphasizing Smith, Ricard, and Mill, and Marxian socialism showing their influence upon the evolution of Twentieth Century economic theory. Emphasis is placed primarily upon the writings of Marshall, Schumpeter, and Keynes, applying their theories to the problems of contemporary economic policy. Special emphasis is given to economic growth and development and the essentials of welfare economics in today's society. Prerequisites: Econ. 301, 302.

- 419. Business Cycles and Forecasting.** 3 cr.
This course is designed to study the process of economic change. Analyses of Seasonal, Cyclical, and Secular movements will be undertaken. Theoretical and empirical aspects will be covered. Forecasting techniques will also be studied. Prerequisite: Econ. 301.

- 420. Business and Public Policy.** 3 cr.
A study of the regulatory techniques used by government to influence and modify business behavior. This course also includes an analysis of market structure, conduct and performance considerations pertaining to the firm and the industry. Emphasis is given to the anti-trust laws and special regulatory problems. Prerequisites: Econ. 211, 212 or 101, 102, 213.

- 421. Current Economic Issues.** 3 cr.
A seminar-like discussion of the state of the nation's economy and its current problems on the basis of critical examination of professional journal articles and economic reports by official and private sources (such as the President's Council of Economic Advisers). The purpose of the course is to begin developing in the graduating senior the ability to coordinate and apply the analytical knowledge he has acquired during his undergraduate study of economics and related fields of social science and business administration. Prerequisites: Econ. 211, 212 or 101, 102, 213.

422. Monetary Theory and Policy.**3 cr.**

This course presents the chief theoretical contributions on money. The policy implications of these theories, past and present, will be emphasized. Concentration will center upon policy proposals and controversy in the monetary field since World War II. The theories and contributions of Wicksell, Fisher, J. M. Clark, Keynes, Robertson and Modigliani, among others, are reviewed. The role of interest rate is reviewed along with wage-price controversies, international gold flows, and the relationships between fiscal and monetary policies. Prerequisites: Econ. 211, 212, 311 or 101, 102, 213.

423. Theory of Economic Development.**3 cr.**

The course is designed to acquaint students with the area of economic development. The subject matter of this course conveniently divides itself into five major categories: the nature of development and problems of measurement, theories of development; factors and forces affecting economic growth; different approaches to a higher standard of living; and problems of domestic and international stability. Approach to this course encompasses detailed study as well as a strong emphasis on theoretical and critical analysis. Prerequisite: Econ. 301.

424. Problems, Policies and Case Studies in Economic Development.**3 cr.**

This course is a continuation of the first semester course in economic development. An attempt is made in this semester to apply the tools, techniques, and theories of development to selected regions and countries of the world. The course is divided into four broad areas—the nature and problems of the case study method, the nature of the socio-economic structure and its impact on development, problems of measurement and of comparison, and the changing role of the basic factors of production. Considerable time will be devoted to a critical study of the actual policy measures adopted for development by selected countries. Prerequisite: Econ. 423.

451. Seminar in Economics.**3 cr.**

The purpose of the seminar is to provide a vehicle for the advanced student to investigate separate subject areas in the field of Economic Theory. The intention is to provide a sound basis for further study at the graduate level. Seminar procedure will stress written and oral reports. Prerequisites: Econ. 301, 302, plus permission of the instructor.

School of Education

HISTORY

Prior to 1929, teacher preparation courses were offered through a department of the College of Liberal Arts and Sciences; in that year the newly-organized School of Education granted its first degrees in programs of secondary education. The following programs have since been approved for certification by the Department of Education of the Commonwealth of Pennsylvania: music education in 1930; graduate education, 1936; elementary education, 1937; guidance, 1952; school administration and supervision, 1952; library science, 1956; special education, 1964; reading specialist and reading supervisor, 1969; school psychologist, 1969; early childhood education, 1975.

SELECTION AND ADMISSION

Candidates who express a desire to become teachers are admitted to the School of Education through the University Office of Admissions (apply to Director of Admissions, Duquesne University, Pittsburgh, Pa. 15219). The curriculum for the first two years (approximately 60 credits) is devoted to the broad learnings in general education and beginning course work in a major discipline or area of concentration.

The School of Education includes and maintains in its enrollment only those students who give definite indications of teacher potential. Students are, therefore, expected to demonstrate developing personal and professional characteristics, attitudes, and competencies which will recommend them as worthy candidates for the teaching profession. Evaluation and approval by the faculty is based on the student's development of:

1. A well-balanced personality as evidenced through personal appearance, health and vitality, emotional maturity, verbal fluency, self-confidence, cooperation, judgment and tact, adaptability and resourcefulness, cultural appreciation, and social relationship.
2. Professional attitudes and competencies as evidenced through interest in teaching, preparation in subject matter and in teaching methods and techniques, participation in laboratory experiences, including observation and student teaching, and the demonstration of necessary abilities and skills.

CURRICULUM

GENERAL EDUCATION

The School of Education requires completion of the established core program which includes courses in the humanities, social sciences, natural and behavioral sciences, and, for Catholic students, theology.

PROFESSIONAL EDUCATION

The basic professional education program introduces the student to the teaching profession through thorough study of the principles and practices of education and the learning process. Special professional education programs introduce the student to the specific teaching techniques and methods required for specific fields of concentration—elementary, secondary, special, or early childhood education.

PROFESSIONAL LABORATORY EXPERIENCES

The School has developed a broad and diversified professional laboratory experience program designed to provide opportunities for observing and working with children and youth. These include:

1. Programs in neighborhood and community centers, hospitals, recreational and youth organizations, and summer camps.
2. Planned observation in public and private school classrooms.
3. Group observation in schools and institutions dedicated primarily to the care of exceptional children.
4. Teacher-aide or tutorial service in public and private schools.
5. Student-aide service at educational television station WQED.
6. Student teaching in a public or private school for an entire semester or year.

All of these experiences are completed under professional supervision from the University and from the off-campus agency or public school.

STUDENT ORGANIZATIONS

The School of Education includes in its program opportunities for participation in student organizations related to professional education preparation. Students are encouraged to take an active part in these professional organizations, for such interest is interpreted as reflecting social and educational development. The organizations are:

Duquesne University Chapter of the Council for Exceptional Children, state and national student organizations in Special Education.

Kappa Phi Kappa, national education fraternity.

Kappa Delta Epsilon, national education sorority.

HONOR AWARDS

These permanent awards, presented at the annual Honors Day Convocation, are open to undergraduates in the School of Education:

“Who’s Who in American Colleges and Universities” certificates.

School of Education Faculty Award for General Excellence in Secondary Education.

School of Education Faculty Award for General Excellence in Elementary Education.

School of Education Faculty Award for General Excellence in Special Education.

Kappa Phi Kappa National Professional Education Fraternity Award for Outstanding Member of Beta Pi Chapter.

Kappa Delta Epsilon National Professional Education Sorority Award for Outstanding Member of Alpha Kappa Chapter.

Kappa Delta Epsilon National Professional Education Sorority President's Award.

Lawrence A. Roche Memorial Award to a Junior Student for General Excellence in the School of Education.

Philip C. Niehaus Memorial Award for outstanding achievement in the School of Education.

Helen S. Platt Memorial Award to a Senior student majoring in Special Education who is in need of financial aid.

Council for Exceptional Children Award for outstanding work in the organization.

TEACHER CERTIFICATION

Through completion of a degree, a student will be eligible for a Pennsylvania Instructional I (Provisional) Certificate to teach a subject or in an area for which the curriculum pursued is designed. All programs are approved by State Department of Education, and certification in Pennsylvania enables a student to meet certification requirements in various other states. Application for the certificate must be made through the Dean's Office during the semester in which the student expects to be graduated.

CLASS ATTENDANCE

The School of Education faculty has determined that the following policy will be in effect for the School of Education and will be adhered to by all professors who teach undergraduate courses: It is presumed that each student in a professional course will normally attend every session. The maximum number of cuts permitted is equated in credit units, not in periods the class meets; in other words, three cuts for a three credit course.

DEGREE

Curriculums in Early Childhood, Elementary, Secondary, and Special Education lead to the degree of Bachelor of Science in Education.

PROGRAMS

*EARLY CHILDHOOD EDUCATION

The program, in accord with the philosophy and objectives of the School of Education, offers students opportunity to qualify for:

1. The Instructional I (Provisional) Certificate to teach early childhood education classes in the schools of Pennsylvania for a period of three years.
2. Admission to graduate programs in education.

This program cannot be completed on a part-time basis. The last 30 credits attempted must be earned at Duquesne University. The minimum number of credits for graduation is 120.

General Education Credits

English Area	15
English Composition	6
English Elective	3
Communications Area (Speech, Journalism, English)	6
Mathematics and/or Science	12
Social Science	12
(Anthropology, Economics, Geography, History, Political Science, Sociology)	
Philosophy and/or Theology	9
Psychology	6
(Introduction to Psychology is a prerequisite to all others)	

*Professional Education Credits

All courses, for a total of 39 credits, are required.

Foundations of Education	3
Educational Psychology	3
Child Development I	3
Child Development II	3
Early Childhood Education I	3
Early Childhood Education II	3
Curriculum Development I	3
Curriculum Development II	3
Language Development and Reading	3
Research Seminar	2
Planning Programs for Young Children	2
Student Teaching in Early Childhood	8

Education Electives Credits

Select from below	9
Field Observations	1-5
Introduction to Art	3
Teaching Elementary Language Arts and Social Studies	3
Teaching Elementary Mathematics and Science	3
Children's Literature	3
Music for the Classroom Teacher	2
Problems in Speech	3
Reading in the Elementary School	3
Problems in Teaching Reading	3
Learning Resources	3
Human Development	3
Eurhythmics	2-4
Independent Study	1-2

Professional Semester

Student Teaching in Early Childhood	8
Research Seminar	2
Planning Programs for Young Children	2

Other Electives

*As this program has been cooperatively developed by Duquesne University and Carlow College for State approval, some or all of the professional courses in Early Childhood Education may be offered on the Carlow campus.

ELEMENTARY EDUCATION

This program, in accord with the philosophy and objectives of the School of Education, offers students opportunity to qualify for:

1. The Instructional I (Provisional) Certificate to teach in the elementary schools of Pennsylvania for a period of three years.
2. Admission to graduate programs in education.

This program cannot be completed on a part-time basis. The last 30 credits attempted must be earned at Duquesne University. The minimum number of credits for graduation is 120.

General Education	Credits
English Area	15
English Composition	6
English Elective	3
Communications Area (Speech, Journalism, English)	6
Mathematics and/or Science	12
Social Science	12
(Anthropology, Economics, Geography, History, Political Science, Sociology)	
Philosophy and/or Theology	9
(Includes 3 credits in Theology required for Catholics)	
Psychology	6
(Introduction to Psychology is a prerequisite to all others)	
Total General Education Requirements	54

Professional Education	Credits
A <i>minimum</i> of 36 hours must be taken in this area.	
Foundations of Education	3
Educational Psychology, Child Development, or Adolescent Development	3
Reading in Elementary School	3
Teaching Elementary Language Arts and Social Studies	3
Teaching Elementary Math and Science	3

Supporting Courses	Credits
Phonetics	3
History Elective	6
Survey of American Federal Government	4
Sociology Elective	3-6
Psychology Elective	3-6
Visual Arts	3
Introduction to Music	3
English Elective	6
Modern Language	18
Mathematics	12
Science	6-8
Introduction to Political Science	3

Education Electives	Credits
Select from below	9
Human Development	3
Children's Literature	3
Introduction to Art	3
Music for Classroom Teacher	2
Psychology of Identity and Fulfillment	3
Learning Resources	3
Eurhythmics	1-2
Field Observation	1-5
Independent Study	1-2
Problems in Teaching Reading	3
Mainstream Seminar	3-6
Independent Study	1-2
Youth and Drug Abuse	2

*Professional Semester	Credits
Student Teaching plus Seminar	12

*No student may register for additional course work during this professional semester.

MUSIC EDUCATION

General and professional course work and professional education courses required for this program are outlined in the School of Music section, page 148.

SECONDARY EDUCATION

The Secondary Education Program, in accord with the philosophy and objectives of the School of Education, offers students opportunity to qualify for:

1. The Instructional I (Provisional) Certificate to teach certain subjects in the

secondary schools of Pennsylvania for a period of three years. Four-year programs lead to certification in: biological science, chemistry, communication arts, English, general science, history, Latin, mathematics, modern languages (French, German, Spanish), physics, social studies (economics, history, geography, political science, sociology), and speech.

2. Admission to graduate programs in education.

This program cannot be completed on a part-time basis. The last 30 credits attempted must be earned at Duquesne University. The minimum number of credits for graduation is 120.

General Education	Credits	Professional Education	Credits
English Area	15	Basic Courses	
English Composition	6	Foundations of Education	3
English Elective	3	Educational Psychology, Child	
Communications Area		Development, or Adolescent	
(Speech, Journalism,		Development	3
English)	6	Professional Semester	
Mathematics and/or Science	12	Secondary Student Teaching	8
Social Science	12	Methods in Major Field	2
(Anthropology, Economics,		Secondary Teaching Techniques	
Geography, History, Political		Laboratory	2
Science, Sociology)		Reading, School Law and Pupil, or	
Philosophy and/or Theology	9	Youth and Drug Abuse	2
(Includes 3 credits in Theology		Secondary Teaching Techniques	
required for Catholics)		Laboratory	2
Psychology	6		
(Introduction to Psychology is			
a prerequisite to all others)			
Total General Education			
Requirements	54		

SUBJECT AREA CERTIFICATION REQUIREMENTS

A minimum of 30 credits (semester hours) is required for certification in the following disciplines: biology, chemistry, communication, English, general science, Latin, mathematics, modern languages, physics, and social studies. This is in addition to the General Education requirements.

Major	Major Field Requirements	Supporting Courses
Biology	Consult with Biology Department	Mathematics, chemistry, and physics
Chemistry	Consult with Chemistry Department	Mathematics and physics
Communication		
English Emphasis	Consult with English Department	Journalism, speech
Journalism Emphasis	Consult with Journalism Department	Speech, English

Speech Emphasis	Consult with Speech Department	English, journalism
English	Consult with English Department	Speech, psychology, journalism
General Science	Minimum of eight credits in biology, chemistry, and physics, and additional courses to total a minimum of 18 semester hours in one field of science	
Latin	Consult with Classics Department	
Mathematics	Calculus I, II, III	General analytical physics
Modern Languages	Consult with Modern Languages Department	Philosophy linguistics
Physics	Consult with Physics Department	Chemistry, mathematics, biology
Social Studies	Economics, geography, history political science, sociology, psychology	Philosophy, anthropology, psychology

SPECIAL EDUCATION (MENTALLY AND PHYSICALLY HANDICAPPED)

The program, in accord with the philosophy and objectives of the School of Education, offers students opportunity to qualify for:

1. The Instructional I (Provisional) Certificate to teach special education classes in the schools of Pennsylvania for a period of three years.
2. Admission to graduate programs in education.

This program cannot be completed on a part-time basis. The last 30 credits attempted must be earned at Duquesne University. The minimum number of credits for graduation is 120.

In addition to the General Education requirements (see page 134), a student must earn the following credits:

	Credits	
Professional Education (Required) . . .	12	Field Experience PH 2
Foundations of Education	3	Intro. to Exceptional Child 3
Educational Psychology	3	Reading in Elementary School 3
Seminar in Education	3	Music for Exceptional Children 3
Selected <i>one</i> of the following:		Teaching the Physically Handicapped 3
Child Development	3	Teaching Children with Learning and Behavior Disorders 3
Adolescent Development	3	Psychology M/R 3
Special Education (Required)	30	Teaching the Severely and Moderately Handicapped 3
Select <i>three</i> experiences:		Teaching the Mildly Handicapped 3
Field Experience MR	2	
Field Experience LD	2	
Field Experience Ed	2	

Professional Semester	15	Abnormal Psychology	3
Student Teaching-Special		Hearing and Audiology	3
Education	12	Speech Problems	
Seminar in Special		Exceptional Child	3
Education	3	Independent Study	1-2
		Learning Resources	3
		Children's Literature	3
Suggested Education Electives	3-9		
Problems in Speech	3		
Introduction to Art	3		

COURSE DESCRIPTIONS

Educational Foundations and Psychology

- 201. Child Development.** 3 cr.
Behavior and personality characteristics of children from birth to adolescence as they relate to school and home situations.
- 202. Adolescent Development.** 3 cr.
Physical, mental, moral, emotional, and social development of the adolescent, including needs, interest, and adjustment problems.
- 203, 204, 205, 206, 207. Field Experience.** 1 cr. each
Classroom and other school experience as an aide or observer. Enrollment with consent of the Director of Student Teaching or a School of Education faculty adviser; one credit each semester for a maximum of five semesters.
- 301. Foundations of Education.** 3 cr.
Introduction to the study of the philosophical, social, and historical foundations of education and the relationships between the school and other institutions of society. Required for all types of state certification.
- 327. Human Development.** 3 cr.
Growth and development of the child, with an emphasis on understanding personality development and problems of growing up.
- 351. Educational Psychology.** 3 cr.
The genetic approach to mental development; the laws of learning and the principles of memory, motivation, transfer and personality development. Measurement in the school program will be studied, coupled with basic statistical concepts for the functional application of these principles.
- 361. Psychology of Identity and Fulfillment.** 3 cr.
Implications of the psychology of personality for the wholesome development of personality and for the prevention of lasting personality disturbances.
- 478. Youth and Drug Abuse.** 3 cr.
Problems of drug abuse and today's youth, including drugs used, the primary toxic and psychological effects, historical and legal aspects. Methods of teaching drug abuse at various levels in the school system are covered, together with availability of literature and visual aids and demonstrations of drugs.

- 480. Independent Study.** **1-2 cr.**
With permission of an instructor and approval of the Dean, seniors may pursue in-depth study of a subject area or engage in individual projects related to their professional goals.
- 481. Learning Resources.** **3 cr.**
Identification, location, utilization, and creation of learning materials; adaptation of print and non-print materials to meet curricular needs; developing materials for individualized classroom instruction.
- 495. Problems in Teaching Reading.** **3 cr.**
Reading difficulties on elementary and secondary school levels; discussion of classroom and clinical procedures in solving reading problems; diagnostic and corrective techniques and materials for the classroom teacher; reading improvement programs; special unit on reading problems of the mentally retarded.
- 496. Evaluation of Learning.** **2 cr.**
Principles of test construction; examination analysis, and interpretation of other media for appraisal of pupil growth and achievement.
- 498. Developmental Reading.** **2 cr.**
A survey course in the teaching of reading; appropriate for both elementary and secondary education majors. Major emphasis is on methods of teaching reading, the materials for evaluating pupil growth in reading, and reading in the content subjects.
- 499. School Law and the Pupil.** **2 cr.**
School law as it affects the child—census, admission practices, vaccination, compulsory attendance; the neglected, dependent, and delinquent child; work periods, graduation requirements, special school services, and other regulations pertaining to the health and welfare of the child.

Early Childhood Education

- 301. Child Development I.** **3 cr.**
Focuses upon the substantive developmental growth in the child from conception through the fourth year of life. Specific emphasis is given to normative physical, intellectual, social, and emotional faculties developing during infancy (ages 0 through 2 years) and during the pre-school years (ages 3 and 4). The role of the family as primary socializing agent is stressed.
- 302. Child Development II.** **3 cr.**
Emphasizes normative physical, intellectual, social and emotional growth and development in the child through the pre-primary and primary school years (ages 5 through 8). Attention is given to the role of the school as socializing agent during these years.
- 304. Early Childhood Education I.** **3 cr.**
The first half of the course encompasses the complete history of child development and early childhood education beginning with the contributions of early educators, Pestalozzi, Froebel, etc., and continuing through the eighteenth, nineteenth, and twentieth centuries. The second half of the course examines recent trends, such as Day-Care Centers, Head Start, Project Follow Through, etc., with participation in child-care programs required.

- 305. Early Childhood Education II.** 3 cr.
Students will examine the humanistic, behavioristic, cognitive-developmental, and psychodynamic theories of child development. In-depth study of early childhood education models—Montessori Method, Bank Street Early Education Program, Demonstration and Research Center for Early Education, Bereiter-Engleman Curriculum, etc.,—will be a requirement along with participation in pre-school programs.
- 307. Curriculum Development I.** 3 cr.
Focuses upon the development of creative abilities in children, age three through eight. Areas covered will include art, music, creative dramatics, and physical activities. Planning and implementing activities is required.
- 308. Curriculum Development II.** 3 cr.
Focuses on fostering the young child's curiosity in the environment as reflected in the physical and social sciences. Planning and implementing activities are required.
- 401. Language Development and Reading.** 3 cr.
Emphasis is placed on oral expression as a base for development of all language skills including reading. Reading readiness programs and reading programs for the primary level are examined.
- 403. Research Seminar.** 2 cr.
Designed to acquaint the undergraduate student with general research methodology in child development as preparation for critical consumption of research.
- 405. Planning Programs for Young Children.** 3 cr.
Emphasis is placed upon principles and techniques involved in planning and administering programs, such as parent involvement, law and the young child, community relations, licensing procedures, health regulations, equipment selection, and classroom management.
- 490. Student Teaching in Early Childhood Education.** 8 cr.
The student teaching experience is considered to be one of the most important single elements of the program. The prospective teacher is involved in a pre-school primary setting where he/she share the teacher role, applies and constructs theory and develops his/her own teaching style.

Elementary Education

- 203. Problems in Speech.** 3 cr.
A survey of various speech and hearing disorders, and causes; recognition and possible therapy. Prerequisite: Speech 201.
- 320. Introduction to Art.** 3 cr.
Designed to acquaint the student with materials, methods, and techniques used in relating arts and crafts to purposeful learning activities, with particular attention given to the needs of the mentally retarded child.
- 325. Reading in Elementary School.** 3 cr.
Principles, materials, and methods of instruction in reading on the elementary school level; growth toward independent reading skills; development of techniques; appraisal, record and report of progress.
- 331. Teaching Elementary Language Arts and Social Studies.** 3 cr.
The theories, techniques, practices, and content pertaining to the areas of language arts and social studies. Pre-professional laboratory experiences in a public school.

- 332. Teaching Elementary Mathematics and Science.** 3 cr.
The theories, techniques, practices, and content pertaining to areas of mathematics and science. Pre-professional laboratory experiences in a public school.
- 484. Children's Literature.** 3 cr.
A general survey of books and other printed materials for children; criteria for the evaluation and analysis of children's books; types of books available, considered in terms of interests, needs, and abilities of children.
- 490. Elementary Student Teaching.** 9 cr.
Student teaching in approved public elementary school under the direct supervision of a cooperating teacher.
- 493. Seminar in Elementary Teaching.** 3 cr.
Exploration of learning styles, methods and practices of meeting individual differences in the classroom; role-playing and simulated experiences.

Secondary Education

- 362. Teaching Communication in Secondary Schools.** 2 cr.
- 363. Teaching Foreign Languages in Secondary Schools.** 2 cr.
- 365. Teaching the Sciences in Secondary Schools.** 2 cr.
- 366. Teaching Mathematics in Secondary Schools.** 2 cr.
- 471. Secondary Teaching Techniques Laboratory** 2 cr.
- 475. Problems in Teaching Social Studies in Secondary Schools.** 2 cr.

The foregoing methods courses include examination of the principles, nature and trends in the various curricula in secondary schools; survey of available texts, materials, and varied techniques; supervised observation of master teachers in public schools.

- 490. Secondary Student Teaching.** 8 cr.
Student teaching in an approved public secondary school under the direct supervision of a cooperating teacher.

Special Education

- 309. Introduction to Exceptional Children.** 3 cr.
Survey of the social, psychological, and physical characteristics of the various types of exceptional children and of methods for meeting their educational needs; includes field trips to schools and classes which specialize in the education of the atypical child.
- 374. Music for the Exceptional Child.** 3 cr.
Singing and rhythmic movement activities are basic to this course. It also includes folk dance, listening, and instrumental (percussion instruments) experiences.
- 376. Teaching the Physically Handicapped.** 3 cr.
Overview of the education of children whose mental, sensory motor, language and emotional limitations and deviations are the result of a physical disability. Emphasis is placed on instructional models and techniques, curriculum content and evaluation aspects.

- 379. Teaching Children with Learning and Behavior Disorders.** 3 cr.
Psychological effects of learning and behavioral disorders on children and youth. Attention is given to the use of psychological and educational evaluations, educational placement, and desirable teacher competencies through case studies. Consideration will be given to meeting the needs of such children in an educational setting including those referred to as learning disabled and socially and emotionally disturbed.
- 485. Psychology of the Mentally Retarded.** 3 cr.
Study in depth of the etiology and characteristic syndromes representative of the mentally retarded. Patterns of development, nature and needs, will be considered in relationship to education and rehabilitation.
- 487. Teaching the Severely and Moderately Handicapped.** 3 cr.
Evaluation and integration of the various theories, methodologies, curriculum content, instructional techniques, and evaluation procedures for the profoundly and trainable mentally retarded.
- 488. Teaching the Mildly Handicapped.** 3 cr.
Evaluation and integration of the various theories, methodologies, curriculum content, instructional techniques, and evaluation procedures for the mildly handicapped.
- 490. Student Teaching—Special Education.** 9 cr.
A full semester of supervised classroom experience at a carefully-selected school for mentally retarded pupils.
- 493. Seminar in Special Education.** 3 cr.
Analysis of the problems of mental retardation as they relate to etiological factors, home community adjustment, personality development, and educational management. Emphasis is placed on current issues in the field and their application to the learning disorders of the mentally retarded.

School of Music

HISTORY

Duquesne University, recognizing that it was most fortunately situated to offer outstanding opportunities for professional preparation in music, in 1926 established a School of Music with a four-year course of study leading to the Bachelor of Music degree. The music education program was approved by the Pennsylvania Department of Education in 1930. In 1959 the School became an associate member of the National Association of Schools of Music and in 1966 was elected to full membership. On April 29, 1967 a new air-conditioned music building was dedicated. Van Cliburn was awarded an honorary Doctor of Music degree on this occasion.

PHILOSOPHY AND OBJECTIVES

The administration and faculty of the School of Music believe that the development of the artistic personality is entirely compatible with the highest objectives of scholars in all fields. It is felt that the best place to educate music students to take their place in society is in a situation where they have an opportunity to share their academic courses in classes with students from other schools of the University. The great advantage of a solid musical preparation and the opportunity to participate in nationally recognized organizations and in performances of professional caliber are available to all of our students.

The faculty of musical scholars and artists with whom Duquesne students work believes that fine talents are best encouraged and developed in an atmosphere that is friendly while at the same time committed to the development of excellence. The faculty, selected with care, includes the names of concert and opera soloists, members of the Casals Festival Orchestra, the Pittsburgh Symphony, nationally known composers, authors, arrangers, conductors, clinicians, and music educators. The Pittsburgh Symphony, Pittsburgh Opera, chamber music and concert series, WDUQ (the Duquesne University radio station) and the high level of interest on the part of other radio and television stations in the arts serve as unusual stimuli to the eager music student.

The Symphony Band and the Concert Band, in their many performances on and off campus, present a wide variety of standard and contemporary repertoire.

The Symphony Orchestra offers fine opportunities for the student interested in orchestral literature. Its associations with teachers who are members of the Pittsburgh Symphony is an exceptional advantage.

The School also maintains various vocal and instrumental ensembles that are receiving national recognition for the excellence of their performances.

The objectives of the School of Music are to educate teachers and performers of music who should possess a sensitive and intelligent musicianship, and who will be

equipped, by reason of their general and professional education, to accept positions in fields of performance and/or education.

ADMISSION

Students who are interested in applying for admission to the School of Music should request an application from the Office of Admissions, Duquesne University, Pittsburgh, Pennsylvania 15219. After applications have been processed, candidates will receive a notice requesting that they contact the Office of the School of Music to arrange an appointment for an audition and a theory entrance examination. Specific instructions concerning the audition will then be mailed to the applicant. A tape recording will be accepted for those living more than 150 miles from the University. However, in the event the recording is not satisfactory, a personal audition may be required. All applicants will be notified of the status of their candidacy as soon as possible.

Students planning to major in Music Education are urged to begin study of piano and theory prior to entrance.

ADVISEMENT

At initial enrollment, every student is assigned a faculty advisor who provides assistance with academic matters, especially during pre-registration periods. Guidance in professional objectives will also be provided by faculty committees established for that purpose.

SPECIAL FEES

Student Teaching	\$ 25.00
Instruction in voice or instrument as a minor, each semester	\$ 25.00
Piano Class Fee, each semester	\$ 10.00
Instrument rental for use in major study (except harp, string, bass, oboe, bassoon, tuba and percussion)	\$ 25.00
Instrument rental for use in minor study (except harp, string bass, tuba and percussion)	\$ 10.00
Instrument for class use	\$ 10.00
Organ practice (major or minor) each semester	\$ 10.00

SUMMER SESSION

Private Instruction Fees

Two hours a week (major)	\$ 75.00
One hour a week (major)	\$ 37.50
One hour a week (minor)	\$ 25.00

Instrument Rental

Instrument for class use	\$ 5.00
Instrument for summer months	\$ 15.00
Instrument for use in six-week Summer Session	\$ 5.00
Organ practice for use in six-week Summer Session	\$ 5.00

SPECIAL STUDENTS—PRIVATE INSTRUCTION

These fees are charged to non-degree students and others taking the instruction without credit.

One hour a week	\$227.00
One half hour a week	\$113.50
One hour a week (Summer Session)	\$113.50

FEES WHICH MAY BE APPLICABLE WHEN STUDENT IS TAKING FEWER THAN 12 CREDITS

Instruction in voice or instrument as a major, each semester	\$ 75.00
Practice room	\$ 15.00
Music fee	\$ 10.00

DEGREES

The School offers programs leading to two undergraduate degrees: The Bachelor of Music and the Bachelor of Science in Music Education. The Bachelor of Music degree may be earned with a major in piano, organ, voice, or orchestral instruments. These programs are intended for the student interested primarily in performance careers in concert, television, radio, symphony orchestra, and opera, as well as teaching careers in colleges or private studios. Two Music Education programs are offered, one in general music and the other in music therapy; the former is designed to meet certification requirements for teaching in elementary and secondary schools while the latter leads to certification as a registered music therapist. All programs begun at the undergraduate level, except music therapy, may be continued at the graduate level.

EQUIPMENT

The School of Music has 73 pianos including 56 Steinways. All practice rooms have Steinway uprights. There are two Moeller and one Fischer practice organs, a three manual Moeller organ, and an electronic organ. More than 300 orchestral and band instruments are available for instrument classes, including an EMS Sound Synthesizer. Listening and recording equipment are of professional quality.

STUDENT ORGANIZATIONS

Chapters of the national music fraternity, Phi Mu Alpha Sinfonia, and the national music sorority, Mu Phi Epsilon, contribute substantially to the students' professional and social development. The Music Educators National Conference has an active student chapter which sponsors professional programs and attends and participates in the state, regional, and national activities of the association. There are active student chapters of the American Guild of Organists and the National Association of Music Therapists. Student Council is the organization which is designed to represent the total student body at the School of Music. In addition, it provides an excellent vehicle of communication among students, faculty, and administration.

HONOR AWARDS

The Dean's Award is presented to a senior music student for general excellence.

The Seibert Medal is presented to a senior for excellence in violin or piano.

George Barrere Memorial Scholarship. The Pittsburgh Flute Club offers a scholarship in flute in memory of George Barrere, founder of the first flute club in the United States. This \$300 scholarship is awarded to a freshman or sophomore flute major.

Polish Arts League Scholarship is made annually by the Polish Arts League of Pittsburgh to an outstanding performer in the School of Music. Preference will be given to a student of Polish ancestry. Other students will not be excluded from consideration.

Pittsburgh Flute Club Award is given to an outstanding woodwind student.

Louis Rocereto Memorial Scholarship is given to an outstanding junior studying a woodwind instrument.

Ezio Pinza Memorial Scholarship. This award of \$1,000 is presented to an outstanding vocal student, male or female, between the ages of 17 and 25 who has not yet completed an undergraduate degree.

TEACHER CERTIFICATION

All undergraduate programs have been approved by the Pennsylvania Department of Education for the issuance of the Instructional I (Provisional) Certificate. Application for the certificate must be made in the semester in which the student plans to graduate.

RECITAL ATTENDANCE

Students are required to attend 75 percent of the recitals and concerts sponsored by the School of Music. While attendance at all events is encouraged, the number need not exceed 25 a year.

THEOLOGY REQUIREMENT

One, three-credit course in theology is required of every Roman Catholic student.

PROGRAMS

Students' interests are served and their abilities furthered through their selection from among six different programs, four in applied music and two in music education.

BACHELOR OF MUSIC—MAJOR IN PIANO

Dept.	Cat. No.	Title	Credits	
			Fall	Spring
Mus. ¹	103,104	Applied Music (Piano)	4	4
Mus.	111,112	Applied Music Minor	1	1
Mus.	131,132	Theory	2	2
Mus.	133,134	Solfeggio	2	2

Mus.	143,144	Ensemble: Chorus	1	1
Mus.	121,122	Physical Education (Eurhythmics)	2	2
Eng.	101,102	English Composition	3	3

Sophomore Year

Mus. ¹	203,204	Applied Music (Piano)	4	4
Mus.	211,212	Applied Music Minor	1	1
Mus.	231,232	Theory	2	2
Mus.	233,234	Solfeggio	2	2
Mus.	243,244	Ensemble: Chorus	1	1
Mus.	251,252	Music and Western Civilization	3	3
Mus.	241,242	Chamber Music	2	2

Junior Year

Mus. ¹	303,304	Applied Music (Piano)	4	4
Mus.	351,352	Music and Western Civilization	3	3
Mus.	343,344	Ensemble: Chorus or	1	1
	347,348	Small Ensemble	(1)	(1)
Mus.	335,336	Counterpoint	2	2
Mus.	341,342	Chamber Music	2	2
Mus.	191	Human Physiology or	3	(3)
Mus.	253	Visual Arts or		(3)
Acad. El.		Academic Elective		(3)

Senior Year

Mus. ¹	403,404	Applied Music (Piano)	5	5
Acad. El.		Academic Elective or Theology	3	(3)
Mus.	491	Physical Science (Acoustics)		3
Mus. ²	313,314	Piano Methods	2	2
Mus.	441,442	Chamber Music	2	2
Mus.	443,444	Ensemble: Chorus or	1	1
	447,448	Small Ensemble	(1)	(1)
Mus.	340	Orchestration	(2)	2
Mus.	379	Conducting	2	(2)

Includes performance classes required by the piano department.

²If 313, 314 Piano Methods is offered in the student's junior year it should be taken, and counterpoint should be taken in the senior year.

BACHELOR OF MUSIC—MAJOR IN ORGAN

Dept.	Cat. No.	Title	Credits	
			Fall	Spring
Mus. ¹	103,104	Applied Music (Organ)	4	4
Mus.	111,112	Applied Music Minor (Piano)	1	1
Mus.	131,132	Theory	2	2
Mus.	133,134	Solfeggio	2	2
Mus.	143,144	Ensemble: Chorus	1	1
Mus.	121,122	Physical Education (Eurhythmics)	2	2
Eng.	101,102	English Composition	3	3

Sophomore Year

Mus. ¹	203,204	Applied Music (Organ)	4	4
Mus.	211,212	Applied Music Minor (Piano)	1	1
Mus.	231,232	Theory	2	2
Mus.	233,234	Solfeggio	2	2
Mus.	185,186	Voice Class	2	2
Mus.	243,244	Ensemble: Chorus	1	1
Mus.	251,252	Music and Western Civilization	3	3

Junior Year

Mus. ¹	303,304	Applied Music (Organ)	4	4
Mus.	351,352	Music and Western Civilization	3	3
Mus.	343,344	Ensemble: Chorus or	1	1
	347,348	Small Ensemble	(1)	(1)
Mus.	335,336	Counterpoint	2	2
Mus.	340	Orchestration	2	(2)
Mus.	379	Conducting	(2)	2
Mus.	191	Human Physiology or	3	(3)
Mus.	253	Visual Arts or		(3)
Acad. El.		Academic Elective		(3)

Senior Year

Mus. ¹	403,404	Applied Music (Organ)	6	6
Acad. El.		Academic Elective or Theology	3	(3)
Mus.	491	Physical Science (Acoustics)		3
Mus.	431,432	Improvisation	1	1
Mus. ²	452	Organ Literature	2	
Mus.	()	Elective		2
Mus.	438,439	Composition	2	2
Mus.	443,444	Ensemble: Chorus or	1	1
	447,448	Small Ensemble	(1)	(1)

¹Includes performance classes required by the organ department.

²If 452 Organ Literature is offered in the student's junior year it should be taken, and counterpoint should be taken in the senior year.

BACHELOR OF MUSIC—MAJOR IN VOICE

<i>Dept.</i>	<i>Cat. No.</i>	<i>Title</i>	<i>Credits</i>	
			<i>Fall</i>	<i>Spring</i>
Mus. ¹	109,110	Applied Music (Voice)	3	3
Mus.	111,112	Applied Music Minor (Piano)	1	1
Mus.	131,132	Theory	2	2
Mus.	133,134	Solfeggio	3	2
Mus.	143,144	Ensemble: Chorus	1	1
Mus.	121,122	Physical Education (Eurhythmics)	2	2
Eng.	101,102	English Composition	3	3
Mus.	193,194	Italian Diction	1	1

Sophomore Year

Mus. ¹	203,204	Applied Music (Voice)	3	3
Mus.	211,212	Applied Music Minor (Piano)	1	1
Mus.	231,232	Theory	2	1
Mus.	233,234	Solfeggio	2	2
Mus.	251,252	Music and Western Civilization	3	3
Fr.	101,102	Elementary French	3	3
Mus.	243,244	Ensemble: Chorus	1	1

Junior Year

Mus. ¹	303,304	Applied Music (Voice)	4	4
Mus.	311,312	Applied Music Minor (Piano)	1	1
Mus.	351,352	Music and Western Civilization	3	3
Ger.	101,102	Elementary German	3	3
Mus.	335,336	Counterpoint	2	2
Mus.	349,350	Vocal Repertoire	1	1
Mus.	343,344	Ensemble: Chorus or	1	1
	347,348	Small Ensemble	(1)	(1)

Senior Year

Mus. ¹	403,404	Applied Music (Voice)	6	6
Mus.	191	Human Physiology or	3	(3)
Mus.	253	Visual Arts or		(3)
Acad. El.		Academic Elective or Theology		(3)
Mus.	449,450	Vocal Repertoire	1	1
Mus.	() ()	Music Electives	2	2
Mus.	379	Conducting	2	(2)
Mus.	340	Orchestration	(2)	2
Mus.	443,444	Ensemble: Chorus or	1	1
	447,448	Small Ensemble	(1)	(1)

¹Includes performance classes required by the voice department.

BACHELOR OF MUSIC—MAJOR IN ORCHESTRAL INSTRUMENT**Freshman Year***Credits*

<i>Dept.</i>	<i>Cat. No.</i>	<i>Title</i>	<i>Fall</i>	<i>Spring</i>
Mus. ¹	103,104	Applied Music (Instrument)	3	3
Mus.	111,112	Applied Music Minor (Piano)	1	1
Mus.	131,132	Theory	2	2
Mus.	133,134	Solfeggio	2	2
Mus.	143,144	Ensemble: Orchestra or Band	1	1
Mus.	121,122	Physical Education (Eurhythmics)	2	2
Eng.	101,102	English Composition	3	3
Mus.	141,142	Chamber Music	1	1

Sophomore Year

Mus. ¹	203,204	Applied Music (Instrument)	4	4
Mus.	211,212	Applied Music Minor (Piano)	1	1
Mus.	231,232	Theory	2	2

Mus.	233,234	Solfeggio	2	2
Mus.	243,244	Ensemble: Orchestra or Band	1	1
Mus.	251,252	Music and Western Civilization	3	3
Mus.	241,242	Chamber Music	2	2
Junior Year				
Mus. ¹	303,304	Applied Music (Instrument)	4	4
Mus.	335,336	Counterpoint	2	2
Mus.	351,352	Music and Western Civilization	3	3
Mus.	341,342	Chamber Music	2	2
Mus.	343,344	Ensemble: Orchestra or Band . . . or	1	1
	347,348	Small Ensemble	(1)	(1)
Acad. El.	() ()	Academic Electives	3	3
Senior Year				
Mus. ¹	403,404	Applied Music (Instrument)	5	5
Mus.	438,439	Composition	2	2
Mus.	443,444	Ensemble: Orchestra or Band . . . or	1	1
	447,448	Small Ensemble	(1)	(1)
Mus.	191	Human Physiology . . . or	3	(3)
Mus.	253	Visual Arts or		(3)
Acad. El.		Academic Elective or Theology		(3)
Mus.	491	Physical Science (Acoustics)		3
Mus.	379	Conducting	2	(2)
Mus.	340	Orchestration	(2)	2
Mus.	441,442	Chamber Music	2	2

¹Includes performance classes required by individual departments.

BACHELOR OF SCIENCE IN MUSIC EDUCATION

Freshman Year			<i>Credits</i>	
<i>Dept.</i>	<i>Cat. No.</i>	<i>Title</i>	<i>Fall</i>	<i>Spring</i>
Eng.	101,102	English Composition	3	3
Mus.	131,132	Theory	2	2
Mus.	133,134	Solfeggio	2	2
Mus.	181,182	Woodwind Class Methods (Instrumental) majors will enroll for 183, 184)	2	2
Mus. ¹	101,102	Applied Music Major	2	2
Mus. ²	111,112	Applied Music Minor (Piano)	1	1
Mus.	121,122	Physical Education (Eurhythmics)	2	2
Mus.	143,144	Ensemble	1	1
Sophomore Year				
Mus.	231,232	Theory	2	2
Mus.	233,234	Solfeggio	2	2
Mus.	185,186	Voice Class	2	2
Mus. ³	213,214	Piano Class	1	1
Mus.	251,252	Music and Western Civilization	3	3
Mus.	281,282	Brass Class Methods (Instrumental) majors will enroll for 283, 284)	2	2

Mus. ¹	201,202	Applied Music Major	2	2
Mus.	211 ⁴	Applied Music Minor	1	
Mus. ⁴	215 ⁴	Piano Class		1
Mus.	243,244	Ensemble	1	1
Junior Year				
Psych.	103	Introduction to Psychology	3	(3)
Ed.	301	Foundations of Education . . . or	(3)	3
Ed.	351	Educational Psychology or		(3)
Ed.	201	Child Development . . . or		(3)
Ed.	202	Adolescent Development		(3)
Mus.	351,352	Music and Western Civilization	3	3
Mus.	381,382	String Class Methods	2	2
Mus.	340	Orchestration	2	(2)
Mus.	379	Conducting	(2)	2
Mus.	383	Elementary Methods	2	(2)
Mus.	384	Secondary Methods	(2)	2
Mus. ¹	301,302	Applied Music Major	2	2
Mus.	343,344	Ensemble or	1	1
	347,348	Small Ensemble	(1)	(1)
Senior Year				
Mus.	191	Human Physiology	3	(3)
Acad.El.		Academic Electic or Theology	(3)	3
Mus.	491	Physical Science (Acoustics)		3
Mus.	253	Visual Arts	3	(3)
Mus.	387	Marching Band Methods or	1	(1)
Mus.	385	Choral Methods		
Mus.	492	Creative Personality or	3	(3)
Acad.El.		Academic Elective		
Mus.	481	Percussion Class Methods	2	(2)
Mus. ¹	401,402	Applied Music Major	2	2
Mus.	443,444	Ensemble or	1	1
	447,448	Small Ensemble	(1)	(1)
Mus.	490	Student Teaching	(6)	6

See footnotes following Music Therapy Curriculum.

BACHELOR OF SCIENCE IN MUSIC EDUCATION—MAJOR IN MUSIC THERAPY

<i>Dept.</i>	<i>Cat. No.</i>	<i>Title</i>	<i>Credits</i>	
			<i>Fall</i>	<i>Spring</i>
Eng.	101,102	English Composition	3	3
Mus.	131,132	Music Theory	2	2
Mus.	133,134	Solfeggio	2	2
Mus.	101,102	Applied Music Major	2	2
Mus.	111,112	Applied Music Minor	1	1
Mus.	107	Music Therapy Orientation	2	

Mus.	124	Music Therapy Practicum I	1
Soc.	101	Survey of Sociology	3
Mus.	121,122	Physical Education (Eurhythmics)	2
Mus.	143,144	Ensemble	1

Sophomore Year

Mus.	185,186	Voice Class	2	2
Mus.	231,232	Music Theory	2	2
Mus.	233,234	Solfeggio	2	2
Mus.	252	Music and Western Civilization		3
Mus.	181	Woodwind Class Methods (for voice, piano, organ majors)	2	
Mus.	183	Woodwind Class Methods (for instrumental majors)	2	
Soc.		Sociology Elective	3	
Mus.	223,224	Music Therapy Practicum II, III	1	1
Mus.	108	Music in Therapy		2
Mus.	201,202	Applied Music Major	2	2
Mus.	213,214	Class Piano	1	1
Mus.	243,244	Ensemble	1	1

Junior Year

Psych.	103	Introduction to Psychology		3
Mus.	351,352	Music and Western Civilization	3	3
Mus.	381	String Class Methods	2	
Mus.	281	Brass Class Methods (for voice, piano, organ majors)		2
Mus.	283	Brass Class Methods (for instrumental majors)		2
El. ⁵		Electives	3	3
Ed.	002	Drug Abuse	1	
Mus.	308	Influence of Music on Behavior	2	
Mus.		Applied Music	2	2
Mus.	323,324	Music Therapy Practicum IV, V	1	1
Mus.	343,344	Ensemble	1	1

Senior Year

Psych.		Psychology Elective		3
Mus.	481	Percussion Class Methods	2	
Psych.	352	Abnormal Psychology	3	
Mus.	191	Human Physiology	3	
Mus.	491	Physical Science (A) ⁶		3
Mus.	307	Psychology of Music (A)	2	
Mus.	600	Psychology of Music (B)	2	
Mus.	309	Directed Study in Music Therapy (B)		2
Mus.	379	Conducting	2	
Mus.	423,424	Music Therapy Practicum VI, VII	2	2
Mus.	340	Orchestration	2	
Mus.		Applied Music	2	2

Mus.		Recreational Instruments	1
Mus.	443,444	Ensemble	1
Acad.El.		Academic Elective or Theology	3

¹Includes performance classes required by individual departments.

²Piano Majors in Music Education select another instrument or voice for their Applied Music Minor. They also continue with the Applied Music Minor 211. (Organ Majors are required to select piano as their secondary instrument.)

³For Orchestral Instrument and Voice Majors only.

⁴For Piano and Organ Majors only.

⁵Electives in psychology, sociology and special education will be selected following consultation with advisor.

⁶Take either series A or B.

COURSE DESCRIPTIONS

Applied Music

- 101, 102, 201, 202, 301, 302, 401, 402. Applied Music Major for the Bachelor of Science in Music Education** **2 cr. each**
- The study of voice, piano, organ, string, wind, or percussion instruments throughout all semesters. The university reserves the right to give equivalent instruction by way of private and class lessons should it seem to the students' advantage to do so.
- 103, 104, 109, 110, 203, 204, 303, 304, 403, 404. Applied Music Major for the Bachelor of Music.** **Var cr.**
- Private study of voice, piano, organ, string, wind, or percussion instruments throughout all semesters. Credits are distributed according to departmental curricula.
- The candidate for the Bachelor of Music degree must give a recital during the senior year. The recital will be presented to a faculty committee for approval at least one month prior to the date of the performance.
- 111, 112, 211, 212, 311, 312, 411, 412. Applied Music Minor for all Bachelor Degrees.** **1 cr. each**
- All students must choose an applied music minor upon entrance. Those students who do not elect piano as a major must study it as a secondary instrument.
- Students not majoring in piano must satisfy the following piano requirements before graduation: (a) construct and play with facility major and minor scales and cadences in all keys; (b) read simple four-part music; (c) play a simple Clementi Sonatina and excerpts from Schumann's "Album for the Young," or their equivalent. A student majoring in piano or organ will select an applied music minor with the guidance of his advisor.

Students who fail to meet the minimum requirements in the time allotted for their particular degree must continue study until the requirements have been fulfilled.

Transfer of Applied Music Credit

Transfer credit in the undergraduate Applied Music program can be granted only after the student's proficiency has been evaluated by a faculty panel in the student's area of specialization.

Changing Assigned Applied Music Teacher

Changes in assigned teachers can become effective only at the beginning of a new semester and cannot be accomplished while a semester is in progress. The student must discuss the feasibility of a proposed change with the appropriate department chairman.

BACHELOR OF MUSIC

BASSOON

103, 104. 3 cr. each

Scales and arpeggios in all keys; Kovar scales, five note studies and interval studies; selected studies and Weissenborn and Milde; solos by Weissenborn, Foret and Mouquet.

203, 204. 4 cr. each

Continue scales and arpeggios; Kovar technical studies; Oubradous, Scales and Daily Drills; Milde, Concert Studies; Handel, Sonata in C minor; solos by Bozza and Vidal.

303, 304. 4 cr. each

Oubradous, Scales and Daily Drills; Milde, Concert Studies; Orefici, Bravura Studies; selected passages from the Bach Cantatas; Mozart Concerto in B flat; Beethoven Quintet; representative contemporary solos; orchestral studies.

403, 404. 5 cr. each

Gambaro, Etudes for Bassoon; Bozza, Fifteen Daily Studies; Sonatas by Hindemith and Saint-Saens; orchestral and chamber music studies; Bozza, Concertino: the contra bassoon.

CLARINET

103, 104. 3 cr. each

Scales and arpeggios in various articulations; Langenus, Scale Studies; Rose, Forty Studies; Cavallini, Thirty Caprices; Weber, Fantasy; Le Fevre, Fantasia Caprice.

203, 204. 4 cr. each

Scales and arpeggios continued; Rose, Twenty Studies after Rode; Jeanjean, Twenty-five Etudes; Weber Concertos; Mozart, Quintet for Clarinet and Strings; orchestral studies.

303, 304. 4 cr. each

Scales and arpeggios continued; Jeanjean, Eighteen Etudes; Labanchi Studies; Brahms sonatas and Quintet for Clarinet and Strings; representative contemporary solos; orchestral studies.

403, 404. 5 cr. each

Jeanjean, Sixteen Modern Studies; Perrier, Vingt-deux Etudes Modernes; Spohr Concerto; Debussy, Premier Rhapsodie; representative contemporary solos and sonatas.

DOUBLE BASS

- 103, 104.** **3 cr. each**
Scales and intervals in all keys. Simandl, Thirty Etudes. Selected pieces. Orchestral studies.
- 203, 204.** **4 cr. each**
Hrabe, Eighty-six Etudes. Short pieces by Koussevitsky and Bottesini. Orchestral studies.
- 303, 304.** **4 cr. each**
Nanny, Etudes de Kreutzer et de Fiorillo; concertos by Koussevitsky, Dittersdory and Bottesini, Orchestral studies.
- 403, 404.** **5 cr. each**
Nanny, Dix Etudes Caprices; Storch, Twenty Concert Etudes; concertos by Koussevitsky and Dragonetti; Orchestral studies.

FLUTE

- 103, 104.** **3 cr. each**
Analysis of student's playing and basic corrections if necessary. Taffanel-Gaubert, scales, scales in thirds, trills. Selected studies by Berbiguier; Anderson, Etudes Op. 33 and 37; Boehm-Wummer, Caprices Op. 26; Kuhlau, Duets, Op. 10. Sonatas of the Baroque Period. Solos by Doppler, Chaminade, Mozart, Moyse; Three Grand Solos Op. 57 by Kuhlau.
- 203, 204.** **4 cr. each**
Taffanel-Gaubert Scales, scales in thirds and sixths, chromatic scales, arpeggios and trills. Anderson, Etudes Op. 21; Hughes, 40 New Studies; Moyse, De la Sonorite. The Modern Gradus ad Parnassum. Selected duets by Kuhlau, Koechlin and Rivier; concertos by Haydn and Mozart; sonatas by LeClair, J. S. Bach and W. F. Bach; solos by Faure, Debussy, and Gaubert.
- 303, 304.** **4 cr. each**
Continue scale study; Taffanel-Gaubert, Progressive Studies; Barrere, The Flutists Formulae; Anderson, Etudes Op. 30; Altes-Barrere, 26 Selected Studies; Moyse, Etudes et Exercises Techniques; Torchio-Wummer, Orchestral Studies. Bach, b minor Suite, Sonatas and arias from the religious works. Arrieu, Sonatine; Gaubert, Sonata No. 2; Telemann, Suite in a minor. Solos by Hue, Enesco, Griffes, Gaubert, and Varese.
- 403, 404.** **5 cr. each**
Taffanel-Gaubert Scales, the half note equals MM 120; scales in thirds, sixths, octaves and tenths; Moyse, De la Sonorite, Mechanism and Chromatics; Anderson, Etudes Artistiques Op. 15, including the memorization of certain selected studies; Anderson Op. 63; Jeanjean, Etudes Modernes; Orchestral Studies; Bach, Sonata in A minor for unaccompanied flute; sonatas by Hindemith, Reinecke; Concerto by Ibert; works by representative contemporary composers.

GUITAR

Information and course content in preparation.

HARP

- 103, 104.** **3 cr. each**
Lariviere Exercises and technical studies. Standard orchestra parts. Bochs Etudes opus

318, Book II. Pieces grade of difficulty of: Grandjany, Aria in Classic Style; Tournier, Images (Suite I); Saint-Saens, Fantasia.

203, 204. 4 cr. each

Technical studies. Bochs Etudes, opus 62. Standard orchestra cadenzas. Pieces of grade difficulty of: Tournier, Feerie; Rousseau, Variations Pastorales; Grandjany, Fantasia on a Theme of Haydn.

303, 304. 4 cr. each

Technical studies. Orchestra parts. Bochs Etudes, opus 34. Pieces grade of difficulty of: Hindemith, Sonata; Handel, Concerto in Bb major; Ravel, Introduction and Allegro.

403, 404. 5 cr. each

Technical studies. Pieces grade of difficulty of: Faure Impromptu; C.P.E. Bach, Sonata; Salzedo, Scintillation; Debussy, Danses Sacre et Profane.

HORN

103, 104 3 cr. each

Scales and arpeggios in all keys; review of fundamentals of tone production; Alphonse, Deux Cents Etudes Nouvelles; Gallay, Thirty Studies; review of muting and trill technic; Dubois, Cavatine; Franz Strauss, Concerto.

203, 204. 4 cr. each

Alphonse, Deux Cents Etudes Nouvelles; Kopprasch Studies; Strauss, Seventeen Concert Studies; Chabrier, Larghetto; Mozart, concertos, orchestral studies.

303, 304. 4 cr. each

Alphonse, Deux Cents Etudes, Nouvelles; Kopprasch Studies; Gallay, Twelve Caprices; Beethoven Sonata; Mozart, Concert Rondo; orchestral studies.

403, 404. 5 cr. each

Alphonse, Deux Cents Etudes Nouvelles; Studies by Kopprasch and Gallay; R. Strauss, Concerto; Saint-Saens, Morceau de concert; Schumann, Adagio and Allegro; Dukas, Villanelle; orchestral studies.

OBOE

103, 104. 3 cr. each

Review of basic technic; Barret Studies; Andraud, Vade Mecum; scales and arpeggios in all keys; Telemann, Sonata in A minor; solos by Schumann, Handel and Bach.

203, 204. 4 cr. each

Continue scales and arpeggios including scales in thirds and measured trills; Barret, Grand Etudes and Duets; Andraud, Vade Mecum; Bleuzet, selected studies from Technique of the Oboe; Handel sonatas; Marcello Concerto.

303, 304. 4 cr. each

Continue scales and arpeggios; Bleuzet, selected studies for range and endurance; orchestral studies; Cimarosa, Concerto; Paris Conservatory solos; representative contemporary compositions.

403, 404. 5 cr. each

Bleuzet, Technique of the Oboe; scales in all articulations, scales in groups of five and seven, scales by interval, arpeggios and broken arpeggios; orchestral studies including the works of J. S. Bach; sonatas by Telemann and Hindemith; solos by Busser, Jolivet,

Rivier; Mozart Concerto, Symphonie Concertante and Quartet; Concerto by Goosens; contemporary solos.

ORGAN

103, 104.

4 cr. each

Gleason, Method of Organ Playing; Stanley, Voluntaries; Franck, L'Organiste; Vierne, 24 Pieces; Dupre, Chorale Preludes; Pachebel, Fugues on the Magnificat. Selected compositions by Gabrieli, Frescobaldi, Buxtehude, Bruhns, Bohm and Couperin; Bach, Orgelbuchlein selections; Eight Short Preludes and Fugues, Little Fugue in G minor and Cathedral Prelude and Fugue. Hymn playing, transposition, modulations to closely related keys, counterpoint.

203, 204.

4 cr. each

Brahms, Chorale Preludes; Mendelssohn, Schumann, Hindemith, Sonatas; Jenkins, Six Pieces; Dupre, Antiphons; Messiaen, Le Banquet Celeste or Ascension Suite, movements 1 or 4; Langlais; Franck, Cantabile or Prelude, Fugue and Variation; Schroeder or Pepping, Vierne, Pieces de Fantaisie; Bach, Orgelbuchlein; Trio Sonata, Concerti, Prelude and Fugue in G Major, D minor, C minor, F minor; Schubler Chorales. Hymn playing, keyboard harmony, modulations to all keys, counterpoint.

303, 304.

4 cr. each

D'Aquin, Clerambault, deGrigny, Handel, Concerti, Franck, Fantaisies, Piece Herioque. Sowerby and contemporary American selections; Mozart, Seelinck; Bach, 18 Great Chorales, Toccata, Adagio and Fugue, Prelude and Fugue in A minor, D major, Orgelbuchlein. Hymn playing, free harmonizations, keyboard harmony and counterpoint, anthem accompaniment.

403, 404.

6 cr. each

Franck, Chorales, Messiaen, Nativite, Lizst, Dupre, Preludes and Fugues; Durufle, Langlais, Vierne and Widor, Symphonies; Alain, Tournemire, selected works by contemporary composers. Bach, Passacaglia and Fugue, Prelude and Fugue in B minor, E minor, G minor. Clavierbung, Part III. Conducting from the console, accompaniment of larger choral works, improvisation.

PERCUSSION

103, 104.

3 cr. each

Fundamental snare drum technique and its application to musical notation, exercises in rhythm phrasing, control. Elements of tympani technique, their application to classical literature, tuning. Rudimentary xylophone technique: scales, arpeggios, forms.

203, 204.

4 cr. each

Advanced snare drum studies, repertoire. Three and four tympani exercises, orchestral literature. Intermediate xylophone studies, transcriptions for solo.

303, 304.

4 cr. each

Tympani study through romantic and contemporary literature. Advanced xylophone exercises, transcriptions. Latin American instrumental techniques; use of special accessories in late 19th and 20th century literature. Repertoire in all instruments.

403, 404.

5 cr. each

Examination of representative solo material for all percussion instruments, preparation of solo for recital.

PIANO

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 Bach, Three Part Inventions; Haydn and Mozart, selected sonatas; Beethoven, Op. 10 and Op. 14; Chopin waltzes, mazurkas, nocturnes; selections from modern repertoire. All major and minor scales in different rhythms and tempi, dominant and diminished seventh arpeggios.
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 Scarlatti, selected sonatas; Bach, selections from Well-Tempered Clavier; Beethoven, Op. 22, Op. 31; Chopin, preludes, impromptus, and nocturnes; Brahms, rhapsodies; selections from contemporary repertoire. Continue scales and arpeggios.
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 Bach, Suites, Partitas, Well-Tempered Clavier; Beethoven, sonatas of the difficulty of Op. 10 No. 3; Chopin, Scherzi, Ballades, and Etudes; Schumann, Fantasiestucke; Debussy, Preludes; Selections from contemporary piano literature. Continue scales and arpeggios.
- 313. Piano Methods I.** **2 cr.**
 Students will become acquainted with the techniques and materials for teaching piano at the elementary level. For piano majors; junior standing is required.
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 A continuation of 313 concentrating on the techniques and materials for teaching piano at the intermediate and advanced levels.
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 Bach, Suites, Partitas, Toccatas, Well-Tempered Clavier; Beethoven sonatas from middle and late periods; more extensive compositions from the Romantic Period; Ravel, Jeux d'eau; at least one work selected from the standard concerto literature; contemporary literature.

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 Mule, Scales and Arpeggios; Small, 27 Melodious and Rhythmic Exercises; Labanchi-Iasilli, 33 Concert Etudes, Vol. I; Concertino by Muilhaud.
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 Rascher, Top Tones and Four Octave Studies; Mule, 53 Studies; Loyon, Thirty-two Studies; Moritz, Concerto; Contemporary solos, orchestral studies.

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 Scales and arpeggios in all keys; Studies by Cimera; Stacey, Lip Studies; Arban, Complete Method for Trombone; Blume Studies Vol. I; Rochut, Melodious Studies Vol. I; La Fosse, Sight Reading Studies.

- 203, 204. 4 cr. each**
Scales and arpeggios in all keys; Stacey, Lip Flexibility, Arban, Complete Method for Trombone; Intensive study of tonguing (single, double and triple); La Fosse, Sight Reading Studies; Rochut, Melodious Studies Vol. II; Blume Studies Vol. II; Kopprasch Studies Vol. I; study of tenor clef; Guilmant, Morceau Symphonique; Ropartz, Andante and Allegro; orchestral and band studies.

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- 403, 404. 5 cr. each**
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TRUMPET

- 103, 104. 3 cr. each**
Schlossberg, Daily Drills; Arban, Complete Method for Trumpet; Sachse, One Hundred Etudes; Brandt, Orchestral Studies; D'Ollone, Solo de Trompette; Videl Concertino.

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Schlossberg, Daily Drills; Sachse, One Hundred Etudes; Brandt, Orchestral Studies; Bousquet Studies; Enesco Concerto; Sowerby Sonata.

- 303, 304. 4 cr. each**
Pietzsch Studies; Bousquet Studies; Brandt, Orchestral Studies; Hindemith, Sonata for Trumpet; Persichetti, The Hollow Men; Intrada by Honegger.

- 403, 404. 5 cr. each**
Sauvuer, Techniques; Paudert, Sixty-two Exercises; Advanced Studies by Clarke, Liersering and others; Concertos by Haydn, Giannini, Bohtnstedt; Peeters Sonata; Orchestral Studies.

TUBA

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Scales and arpeggios in all keys; review of tone production; Rochut, Melodious Studies Vol. I; Blume Studies Vol. I; selected solos.

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Scales and arpeggios in all keys with various articulations; Rochut, Melodious Studies Vol. II; Blume Studies Vol. II; selected solos; orchestral and band studies.

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Scales and arpeggios in three octaves, two octaves scales in thirds, sixths, octaves, and tenths; Rode, Caprices; Wieniawski, Caprices; Mozart, Concerto No. 4; Vieux-temps, Fantasia Appassionato.
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Continue scales and arpeggios, add all possible four octave scales. Gavinies, Twenty-four Matinees; Bruch, Concerto in D minor No. 2; Lalo, Symphonic Espagnole; sonatas by Beethoven and Brahms.
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Wieniawski, Ecole Moderne; Paganini, Caprices; Bach, solo sonatas and partitas; concertos by Beethoven, Brahms, Ernst, Elgar, and Prokofieff.

VIOLA

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Scales and arpeggios in three octaves, selected scales in thirds, sixths and octaves, Flesch, Scale Studies; Sevcik, Studies (Lifschey); Campagnoli, Forty-one Caprices, Fuchs, Twelve Caprices; Enesco, Concert Piece.
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All major and minor scales and arpeggios, scales in octaves, thirds, sixths, and tenths. Selected studies from Rode, Caprices; Hermann, Six Concert Studies Op. 18. Concertos by C.P.E. Bach, and Hoffmeister; Vaughan-Williams, Suite; Sonata by Milhaud; parts from orchestral and chamber music literature.
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Selected Studies from Paganini, Caprices; Reger, Three Suites; Bach, unaccompanied violin or violoncello works transcribed for viola; Bloch, Suite for Viola; concertos by Bartok, Walton, Porter.

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- 103, 104.** **3 cr. each**
Scales and arpeggios in three octaves with varied bowings. Duport Studies; Franchomme, Twelve Caprices. Sonatas of Veracini, Locatelli, and Boccherini.
- 203, 204.** **4 cr. each**
Scales and arpeggios in four octaves with varied bowings, scales in thirds, sixths and octaves, chromatic scales, and seventh chords. Franchomme, Twelve Caprices; Dupont, Etudes. Concertos by Romberg, Popper and Saint-Saens; sonatas by Boccherini and Haydn. Orchestral studies. Contemporary works.
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Continue scales. Etudes by Servais and Piatti. Concertos by Davidoff, Dohnanyi, Lalo;

Boellmann, Symphonic Variations; six solo sonatas of Bach. Orchestral Studies. Contemporary works.

- 403, 404.** **5 cr. each**
Etudes by Servais, Piatti and Popper. Concertos by Haydn, Boccherini, Elgar, Barber; Schubert, Arpeggione Sonata. Contemporary solos and sonatas. Orchestral studies and chamber music literature.

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- 109, 110.** **3 cr. each**
Fundamentals of tone production and technical exercises to fit the needs of the student. Early Italian art songs and songs in English chosen for the purity and simplicity of their line. Sight singing.
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Spoken and sung pronunciation of Italian for singers, with minimal emphasis on grammar.
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Exercises to develop flexibility, range, and power. Early Italian art songs including more florid examples than used in the first year. Early Italian arias by Handel and Monteverdi; oratorio arias by Bach, Handel, and Haydn; German lieder of Schubert and Schumann; French art songs of Faure and Duparc.
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Operatic and oratorio materials chosen from the standard repertoire in French, German, Italian, and English; German lieder of Brahms, Wolf, and Strauss; French art songs of Chausson, Debussy, Faure, Hahn and Ravel.
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Continued study of vocal literature chosen with special consideration for individual needs. All students must have at least one complete oratorio and one complete operatic role ready for performance before graduation. The student's repertoire should contain representative songs in Italian, French, German, and English, including significant examples of contemporary vocal literature.
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A performing class in which students learn standard and other opera repertory in English and the original languages. There is one major production each semester plus several outside performances.
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Study and performance of vocal solo and ensemble literature. Four semesters encompass Italian, German, French, and Contemporary (United State and Britain) music, with concentration on one category each semester.

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All scales and arpeggios; Weissenborn Op. 8 Vol. I; Milde Studies; Galliard, 6 Sonatas for Bassoon.

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- 401, 402.** **2 cr. each**
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All positions up to thumb position; scales and intervals in all keys; Simandl, New Method for the Double Bass.
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Scales continued including thumb positions; Simandl Method continued; selected pieces.
- 301, 302.** **2 cr. each**
Scales and intervals continued; Simandl Method completed; Simandl, Thirty Etudes; selected pieces; violoncello sonatas by Marcello and others; orchestral studies.
- 401, 402.** **2 cr. each**
Simandl, Thirty Etudes; selected studies from Hrabal, Eighty-six Etudes; pieces by Koussevitsky and others; orchestral studies.

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- 101, 102.** **2 cr. each**
Kohler, Etudes Book I; Terschak Studies; Drouet, 25 Celebrated Etudes; scales and arpeggios in all keys; selected solos; Sonatas by Marcello, Handel, and Blavet.
- 201, 202.** **2 cr. each**
Continue scales and arpeggios; Drouet, 25 Celebrated Etudes; Anderson, Etudes Op. 47 selected solos from 19th century composers; Sonatas of Baroque composers.

301, 302. **2 cr. each**
Anderson Etudes, Op. 33 and Op. 21; Taffanel-Gaubert, Daily Studies; all scales and arpeggios in various articulations; pieces by Anderson, Widor, Quantz; Handel sonatas.

401, 402. **2 cr. each**
Anderson, Etudes Op. 30; Bergiguier, 18 Studies; Taffanel-Gaubert Scales, scales in thirds and in sixths, chromatic scales, arpeggios and trills; pieces by Quantz, Donjon, Thomasi, Ibert; sonatas by Handel, Telemann and Blavet; representative contemporary pieces.

GUITAR

Information and course content in preparation.

HARP

101, 102. **2 cr. each**
Lariviere Exercises and technical studies. Standard orchestra parts. Bochs Etudes opus 318, Book II. Pieces grade of difficulty of: Grandjany, Aria in Classic style; Tournier, Images (Suite I); Saint-Saens, Fantasie.

201, 202. **2 cr. each**
Technical studies. Bochs Etudes; opus 62. Standard orchestra cadenzas. Pieces grade of difficulty of: Tournier, Feerie; Rousseau, Variations Pastorales; Grandjany, Fantasie on a Theme of Haydn.

301, 302. **2 cr. each**
Technical studies. Orchestra parts. Bochs Etudes, Opus 34. Pieces grade of difficulty of: Hindemith, Sonata; Handel, Concerto in Bb major; Ravel, Introduction and Allegro.

401, 402. **2 cr. each**
Technical studies. Pieces grade of difficulty of: Faure, Impromptu; C.P.E. Bach, Sonata; Salzedo, Scintillation; Debussy, Danses Sacre et Profane.

HORN

101, 102. **2 cr. each**
Fundamentals of tone production; scales and arpeggios in various articulations; chromatic scales; ability to read in at least two clefs; Mozart, Concerto No. 3; selected melodic material.

201, 202. **2 cr. each**
Extend range of all scales and arpeggios; diminished seventh chords; muting and preparatory trill studies; ability to read in three or four clefs; Alphonse, Deux Cents Etudes Nouvelles Book II; selected solos, orchestral studies.

301, 302. **2 cr. each**
Continue scales, arpeggios and other drills; Alphonse, Deux Cents Etudes Nouvelles Book III; selected studies from Kopprasch 60 Studies Book I; R. Strauss Concerto; orchestral studies.

401, 402. **2 cr. each**
Continue scales, arpeggios and technical drills; Kopprasch, 60 Studies; Gallay, 30 Studies; solos by Mozart, Godard, Corelli; representative contemporary solos, orchestral studies.

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- 101, 102.** **2 cr. each**
 Review of previous work by student and corrective exercises as necessary; scales and arpeggios; Barret, Exercises in Articulation and Progressive Melodies; selected solos.
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 Scales and arpeggios in all keys; continue Barret; selected studies from Bleuzet, Technique of the Oboe Vol. I; solos by Handel and Schumann.
- 301, 302.** **2 cr. each**
 Barret, Progressive Exercises, Bleuzet, Technique of the Oboe Vol. II; continue scales and arpeggios in various articulations; Handel sonatas; orchestral studies; contemporary solos; reed making.
- 401, 402.** **2 cr. each**
 Barret, Etudes; selected etudes by Ferling; continue scales and arpeggios; solos by Bach and Handel; contemporary solos.

ORGAN

- 101, 102.** **2 cr. each**
 Gleason, Method of Organ Playing; Stanley, Voluntaries; Franck, L'Organiste; Vierne, 24 Pieces; Dupre, Chorale Preludes; Pachelbel, Fugues on the Magnificat. Selected compositions by Gabrieli, Frescobaldi, Buxtehude, Bruhns, Bohm and Couperin; Bach, Orgelbuchlein selections; Eight Short Preludes and Fugues, Little Fugue in G minor and Cathedral Prelude and Fugue. Hymn playing, transposition, modulations to closely related keys, counterpoint.
- 201, 202.** **2 cr. each**
 Brahms, Chorale Preludes; Mendelssohn, Schumann, Hindemith, Sonatas; Jenkins, Six Pieces; Dupre, Antiphons; Messiaen, Le Banquet Celeste or Ascension Suite, movements 1 or 4; Langlais; Franck, Cantabile or Prelude; Fugue and Variation; Schroeder or Pepping, Vierne, Pieces de Fantaisie; Bach, Orgelbuchlein; Trio Sonata, Concerti, Prelude and Fugue in G. Major, D minor, C minor, F minor, Schubler Chorales. Hymn playing, keyboard harmony, modulations to all keys, counterpoint.
- 301, 302.** **2 cr. each**
 D'Aquin, Clerambault, deGrigny, Handel, Concerti, Franck, Fantaisies, Piece Herioque. Sowerby and contemporary American selections; Mozart, Sweelinck; Bach, 18 Great Chorales, Toccata, Adagio and Fugue, Prelude and Fugue in A minor, D major, Orgelbuchlein. Hymn playing, free harmonizations, keyboard harmony and counterpoint, anthem accompaniment.
- 401, 402.** **2 cr. each**
 Franck, Chorales, Messiaen, Nativite, Lizst, Dupre, Preludes and Fugues; Durufle, Langlais, Vierne and Widor, Symphonies; Alain, Tournemire, selected works by contemporary composers. Bach, Passacaglia and Fugue, Prelude and Fugue in B minor, E minor, G minor. Clavierbung, Part III. Conducting from the console, accompaniment of larger choral works, improvisation.
- 431, 432. Improvisation.** **1 cr. each**
 A practical application of the basic tools of improvisation including harmonization of melodies at the organ; two and three part counterpoint, short ABA forms and chorale preludes with emphasis on their liturgical application.

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- 101, 102.** **2 cr. each**
Rudimentary snare drum technique, analysis of existing methods. Elementary tympani technique, uses of tympani in classical literature, tuning.
- 201, 202.** **2 cr. each**
Intermediate snare drum studies, elementary xylophone technique. Intermediate tympani studies, orchestral literature Beethoven to Wagner. Performance techniques of most commonly used equipment.
- 301, 302.** **2 cr. each**
Use of tympani and percussion in late 19th and 20th century literature. Orchestral studies in all instruments. Examination of percussion ensemble materials; group instruction methods. Selection and care of instruments for professional and school use. Extension of mallet study.
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Deployment of instruments in band and orchestra settings, conducting the percussion ensemble. Review of teaching methods in basic techniques, the role of the percussion clinician. Problems in writing and scoring for percussion, discussion of available materials and sources for solo performance.

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Bach, two part inventions, short preludes and fugues; easier sonatas of Haydn and Mozart; Beethoven, Rondo in G; easier nocturnes and mazurkas of Chopin. Major scales M.M. quarter note equals 96; diminished seventh arpeggios M.M. quarter note equals 88. All scales and arpeggios in triplet and quadruplet rhythms.
- 201, 202.** **2 cr. each**
Bach, two and three part inventions; sonatas of Haydn and Mozart; easier sonatas of Beethoven; nocturnes and waltzes of Chopin; Schumann Op. 15; Scales: Major and Minor M.M. quarter note equals 104. Dominant and diminished seventh arpeggios M.M. quarter note equals 96.
- 301, 302.** **2 cr. each**
Bach, selected preludes and fugues from Well-Tempered Clavier; Beethoven, Op. 10 No. 2 Op. 27; Chopin, preludes and nocturnes; selections from contemporary repertoire. Continuation of major and minor scales, dominant, diminished seventh and traid arpeggios.
- 401, 402.** **2 cr. each**
Bach, French Suites, selected preludes and fugues; Beethoven Op. 2 No. 2 and 3, Op. 28, Op. 31; preludes and Impromptus of Chopin; Brahms, Intermezzi; selections from contemporary repertoire. Scales and arpeggios continued.

SAXOPHONE

- 101, 102.** **2 cr. each**
All major and minor scales and arpeggios; Universal Method for Saxophone or equivalent material; Bassi-lasilli, Concert Etudes; selected solos.
- 201, 202.** **2 cr. each**
Continue scales and arpeggios with various articulations; Bassi-lasilli, Concert Etudes; selected solos.

- 301, 302.** **2 cr. each**
 Mule, Scales and Arpeggios; Gatti-Iasilli, 35 Melodious Technical Exercises; pieces by Faure and Jeanjean.

- 401, 402.** **2 cr. each**
 Mule, Scales and Arpeggios; Gatti-Iasilli, 35 Melodious Technical Exercises; Labanchi-Iasilli, 33 Concert Etudes; Premier Solo de Concours by Pares; Moritz, Sonata for Saxophone; representative contemporary solos.

TROMBONE AND BARITONE HORN

- 101, 102.** **2 cr. each**
 Studies and exercises in tone production and flexibility by Shiner; Arban, Method for Trombone; major and minor scales through two octaves; selected solos.

- 201, 202.** **2 cr. each**
 All scales and arpeggios; continue drills and Arban Method for Trombone; selected studies from Cimera, 170 Etudes; Study of single, double and triple tonguing; Pryor solos and other selected materials; band and orchestral studies.

- 301, 302.** **2 cr. each**
 Continue technical exercises; Stacey, Lip Flexibility; Rochut, Melodious Etudes Book I-II, Blume, Studies Book I; La Fosse, Sight Reading Studies; study of tenor clef; Croce-Spinelli, Solo de Concours; Alary, Contest Pieces; Morel, Piece in F minor.

- 401, 402.** **2 cr. each**
 Continue technical exercises; Stacey, Lip Flexibility; Kopprasch Book I-II; Rochut, Melodious Etudes Book III; Blazhevich, Clef Studies; study of bass trombone; Guil-mant, Morceau Symphonique; Cimera, Valse Petite; Ropartz, Andante and Allegro.

TRUMPET

- 101, 102.** **2 cr. each**
 All scales and arpeggios; Schlossberg, Daily Drills; Arban, Complete Method for Trumpet; selected short pieces.

- 201, 202.** **2 cr. each**
 All major and minor scales and arpeggios; Schlossberg, Daily Drills; Arban, Complete Method for Trumpet; Kreutzer, Ten Studies; Concerto by Grofe; selected solos; band and orchestral studies.

- 301, 302.** **2 cr. each**
 Continue scales and arpeggios in various articulations; Schlossberg, Daily Drills; Concone, Fifty Lessons; Brandt, Etudes for Trumpet; Bernstein, Rondo for Lifey; Two Pieces for Trumpet by Karzev.

- 401, 402.** **2 cr. each**
 Continue Schlossberg and Concone; Laurent, Etudes Practiques Book I and II; Hering, 32 Etudes, Clarke solos; Mouquet, Legende Heroique; Balay, Petite Piece Concertante.

TUBA

- 101, 102.** **2 cr. each**
 All scales and arpeggios; Arban Method for Trombone and Baritone; selected solo material.

201, 202. **2 cr. each**
All scales and arpeggios with various articulations; continue Arban; Bell, Foundations of Tuba and Sousaphone Playing; selected solos.

301, 302. **2 cr. each**
Continue scales and arpeggios; chromatic scales; Bell, Foundations of Tuba and Sousaphone Playing; Vandercook, Etudes; Rochut, Melodious Etudes Book I; Blume Studies Book I; Tyrrell, Advanced Studies for the BB flat Tuba; selected solos; band and orchestra studies.

401, 402. **2 cr. each**
Rochut, Melodious Etudes Book II; Blume Studies Book II; Blazhevich, Etudes for the BB flat Bass; band and orchestra studies

VIOLIN

101, 102. **2 cr. each**
Scales and arpeggios in three octaves; octaves, thirds and sixths separate bows; Kreutzer, 42 Etudes; selected studies by Sevcik; sonatas by Corelli, Nardini; concertos by Viotti and Kreutzer; DeBeriot, Scene de Ballet.

201, 202. **2 cr. each**
Scales and arpeggios continued; Mazas Op. 36; Sevcik continued; Sonatas by Handel, Tartini and Veracini; DeBeriot, Concerto No. 9; Viotti, Concerto No. 22.

301, 302. **2 cr. each**
Scales and arpeggios continued; scales in thirds, sixths, octaves and tenths; Rode, 24 Caprices; Mozart sonatas for violin and piano; Mozart, Concerto in G; selected compositions by Kreisler; representative contemporary solos; selected movements of standard concertos.

401, 402. **2 cr. each**
Scales and arpeggios continued; Rode, 24 Caprices; Fiorillo 36 Etudes; Grieg, Sonata in F; Mozart, Concerto in D; Bruch, Concerto in G minor; selected movements of standard concertos, representative contemporary solos.

VIOLA

101, 102. **2 cr. each**
Scales and arpeggios in three octaves; Sevcik Studies (Lifschev); Hermann, Technical Studies; Telemann, Concerto in G; Klengel, Album of Classical Pieces.

201, 202. **2 cr. each**
Continue scales and Sevcik Studies; selected studies from Kreutzer, 42 Etudes; Stamitz, Concerto in D; Bruch, Romance.

301, 302. **2 cr. each**
Continue scales and arpeggios; scales in thirds, sixths and octaves; Palachko, 20 Etudes; Fiorillo, selected studies from 36 Etudes; Bach, three viola da gamba sonatas adapted for viola.

401, 402. **2 cr. each**
Scales and arpeggios continued; selected studies from Campagnoli, 41 Caprices; Concerto in B minor by Handel-Casadesus; Hindemith, Music of Mourning; selected contemporary solos; viola parts from orchestral and chamber music literature.

VIOLONCELLO

- 101, 102.** **2 cr. each**
Scales and arpeggios in three octaves; Franchomme, 12 Studies; sonatas by Handel, Corelli; Concertos by Goltermann and Romberg.
- 201, 202.** **2 cr. each**
Scales and arpeggios continued; Duport Etudes; Galeotti, Sonata No. 2; Marais Suite; Romberg Concerto in D minor.
- 301, 302.** **2 cr. each**
Scales and arpeggios continued; Duport Etudes; Grutzmacher Etudes; Sonatas by Grazioli, Sammartini; Goltermann Concerto No. 1.
- 401, 402.** **2 cr. each**
Scales and arpeggios as before but including thirds, sixths and octaves. Duport Studies; selected studies from Franchomme, 12 Caprices; Concerto No. 2 Romberg; Sonatas by Nardini and Sammartini; orchestral studies.

VOICE

- 101, 102.** **2 cr. each**
Fundaments of tone production; vocalises and songs to suit the needs of the student. Songs will be chosen from the repertory of easier materials in English and Italian.
- 201, 202.** **2 cr. each**
Exercises to develop flexibility, range and power; early Italian art songs by Bononcini, Pergolesi, Caccini; contemporary songs in English.
- 301, 302.** **2 cr. each**
More advanced technical study. Italian art songs of Scarlatti and Caldara; representative examples of easier German lieder and moderately difficult contemporary song literature.
- 401, 402.** **2 cr. each**
Advanced technical exercises to fit the student's need. Less difficult arias chosen from the standard operatic and oratorio literature; representative songs in German, French and English with emphasis on contemporary materials in English.

Conducting

- 379. Conducting.** **2 cr.**
This course provides a study of the fundamentals of conducting as a performing skill, teaching technique, and as an interpretive art. Use of the baton, choral and instrumental rehearsal techniques, and score reading. Two hours a week.

Ensemble

Required for all students as laboratory work during each semester of full-time enrollment. At least four semesters (usually the first four) must be spent in one of

the major ensembles—Orchestra, Band, Concert Choir—after which a student may, with the request or approval of the conductor, take one of the smaller ensembles for credit applicable toward the total ensemble requirement. Students must indicate the specific ensemble for which they are enrolling on forms completed during registration.

143, 144, 243, 244, 343, 344, 443, 444, 445, 446. Ensemble. 1 cr. each

Bachelor of Science in Music Education.

Voice, Piano, and Organ Majors will participate in a choral ensemble for each semester of enrollment. Instrumental Majors will participate in Band, Orchestra and/or other instrumental ensemble for each semester of enrollment.

Instrumentalists are encouraged to take advantage of opportunities to participate in choir; keyboard or voice majors are likewise encouraged to gain experience in one of the instrumental ensembles.

Bachelor of Music.

Voice Majors will participate in choir or other choral/vocal ensemble. Piano and organ majors will accompany soloists as approved by the studio faculty. Instrumental Majors will participate in band, orchestra, or other instrumental ensemble.

147, 148, 247, 248, 347, 348, 447, 448. Small Ensemble. 1 cr. each

The Small or Minor Ensembles include Tamburitza Ensemble, Chamber Singers, Brass Ensemble, Percussion Ensemble, Woodwind Ensemble, and Jazz Ensemble. May be taken by freshmen and sophomores for extra credit or by juniors and seniors for required credit provided that Major Ensemble requirements have been satisfied, and that permission of the conductor has been granted.

116, 117, 216, 217, 316, 317, 416, 417. Opera Workshop. 1 cr. each

A performing class in which students learn standard and other opera repertory in English and the original languages. There is one major production each semester plus several outside performances. May be taken by freshmen and sophomores for extra credit or by juniors and seniors for required credit provided that Major Ensemble requirements have been satisfied, and that permission of the conductor has been granted.

141, 142, 241, 242, 341, 342, 441, 442. Chamber Music. 1-2 cr. each

Study and performance of all types of chamber music for the various instrumental combinations.

Eurhythmics

121, 122. Eurhythmics. 2 cr. each

Fundamentals of rhythmic movement. Study of pulse, meter, rhythm, and duration; the expressive qualities of music such as tempo, dynamics, and phrasing realized and expressed through bodily movement. Two hours a week.

Music Education

181. Woodwind Class Methods I. 2 cr.

Fundamental principles and techniques of playing and teaching the clarinet. Study of literature which is appropriate for beginning class instruction. For voice, piano, and

organ majors in the music education program. Offered in the fall semester. Two hours a week.

182. Woodwind Class Methods II. 2 cr.

Performance technique on clarinet continued. Teaching technique of oboe, bassoon and saxophone covered. For voice, piano, and organ majors in the music education program. Prerequisite: Music 181. Offered in spring semester. Two hours a week.

183. Woodwind Class Methods I. 2 cr.

Fundamental principles and techniques of playing and teaching the clarinet. Study of literature which is appropriate for beginning class instruction. For woodwind, brass, string, and percussion majors in the music education program. Offered in the fall and spring semesters. Two hours a week.

184. Woodwind Class Methods II. 2 cr.

Fundamental principles and techniques of playing and teaching the saxophone, oboe, flute and bassoon. Study of mechanism and evaluation of class methods and materials. Students are expected to develop a reasonable performing skill on each instrument. For woodwind, brass, string, and percussion majors in the music education program. Music 183 is not a prerequisite for this course. Offered in the fall and spring semesters. Two hours a week.

185, 186. Voice Class. 2 cr. each

Fundamentals of voice production including placement, breathing, breath control, study of vowels and consonants, posture, elementary song materials, interval and scale drill, sight singing.

213, 214. Piano Class. 1 cr. each

The development of functional keyboard skills in sight reading, transposition, harmonization of melodies, and improvisation of accompaniments. Required of all Music Education students with the exception of piano majors. Two hours a week. Prerequisites: Piano 111, 112 or Advanced Standing Examination.

215. Piano Class for Piano Majors in Music Education. 1 cr. each

Piano majors in Music Education study the development of functional keyboard skills in sight reading, transposition, accompaniments. Required of all Piano Majors. Two hours a week.

281. Brass Class Methods I. 2 cr.

Fundamental principles and techniques of playing and teaching the trumpet. Study of literature which is appropriate for beginning class instruction. For voice, piano, and organ majors in the music education program. Offered in the fall semester. Two hours a week.

282. Brass Class Methods II. 2 cr.

Performance technique on trumpet continued. Teaching technique of French horn, trombone, baritone, and tuba. For voice, piano, and organ majors in the music education program. Prerequisite: Music 281. Offered in the spring semester. Two hours a week.

283. Brass Class Methods I. 2 cr.

Fundamental principles and techniques of playing and teaching the trumpet. Study of literature which is appropriate for beginning class instruction. For woodwind, brass, string, and percussion majors in the music education program. Offered in the fall and spring semesters. Two hours a week.

- 284. Brass Class Methods II.** **2 cr.**
Fundamental principles and techniques of playing and teaching French horn, trombone, baritone, and tuba. Study of construction, fingering, and evaluation of class methods and materials. For woodwind, brass, string, and percussion majors in the music education program. Music 283 is not a prerequisite for this course. Offered in the fall and spring semesters. Two hours a week.
- 381. String Class Methods I.** **2 cr.**
Each student selects one of the string instruments and studies it throughout the semester in order to attain greater technical proficiency. Two hours a week.
- 382. String Class Methods II.** **2 cr.**
Fundamental principles and techniques of playing and teaching the violin, viola, cello, and bass. Bowing, positions, vibrato, and an examination of class methods and materials are presented. Two hours a week.
- 383. Elementary Methods.** **2 cr.**
Principles, practices, and materials for the general program in the elementary grades. A program of scheduled observations and discussion periods will be required. Two hours a week.
- 384. Secondary Methods.** **2 cr.**
Principles, practices, and materials for the general music program in the secondary schools including voice classification; the organization of ensemble activities; concerts; assembly programs; and the relationship of the school to the community. A program of scheduled observations and discussion periods will be required. Two hours a week.
- 385. Choral Methods.** **1 cr.**
This course deals with all aspects of choral singing and their application to school music programs. Emphasis is placed on the development of performance ensembles, rehearsal techniques, special choral problems, planning musical productions and practical work in choral conducting and arranging. Includes principles, practices, materials, and an overview of current teaching strategies and curriculum trends as applied to the total music program of the secondary school. Offered Spring Semester only.
- 387. Marching Band Methods.** **1 cr.**
Principles, practices, and materials for the marching band are studied including its role in the total music program; organization and maintenance; planning and executing of the field show; basic maneuvers and rehearsal procedures. Offered Fall Semester only.
- 481. Percussion Class Methods.** **2 cr.**
Fundamental principles and techniques of playing and teaching the percussion instruments of the band and orchestra with special emphasis on the snare drum. Two hours a week.
- 490. Student Teaching.** **6 cr.**
Practice teaching in approved elementary and secondary schools under the guidance of a critic teacher and the college supervisor. Note: Before a student will be permitted to begin Student Teaching, all methods classes including instrumental classes, piano, woodwinds, brass, strings, and voice must be satisfactorily completed. Percussion class may be taken in the senior year prior to or concurrently with the student teaching assignment. Students will receive complete instructions, together with lists of materials, when they enroll in the Music Education program. Practical techniques to aid students in fulfilling the requirements will be explored in various methods classes.

Music History, Literature and Art

251, 252, 351, 352. Music and Western Civilization. 3 cr. each

An historical survey of the ideas and cultural achievements of Western man in the context of the political and sociological developments to which the art of music is bound. The survey embraces four semesters which are arranged chronologically. These courses seek to provide a broad historical frame of reference within which the relationship of music to the development of man's thought can be clearly seen.

452. Organ Literature. 2 cr.

A survey of organ literature and organ building. Outside listening and readings will be required.

349, 350, 449, 450. Vocal Repertoire. 1 cr. each

Study and performance of vocal solo and ensemble literature. Four semesters encompass Italian, German, French, and Contemporary (United States and Britain) music, with concentration on one category each semester.

253. Visual Arts. 3 cr.

Designed to give the student a basic vocabulary in the visual arts (painting, sculpture, architecture, and the graphic arts) and to make him conversant with the most important styles he will encounter. During the course of the semester, the course will include several visits to the museums and galleries in the Pittsburgh area.

Music Theory

The Theory Department recognizes the individual differences of students and provides an opportunity for them to advance according to their abilities.

131, 132. Theory. 2 cr. each

This course is designed to acquaint the student with the materials of musical composition using diatonic harmony. Opportunities for the student to do creative work are provided. Three hours a week.

133, 134. Solfeggio and Ear Training. 2 cr. each

The goals of the course are to develop good intonation and the ability to sight sing, the ability to identify and notate melodies, rhythms, chords, and complete compositions, and to develop inner hearing and memory. The devices used are solfeggio (singing unison and ensemble music, prepared and on sight), drills on intervals and broken chords, unison and two-part rhythm exercises, keyboard work and clef reaching, and systematically graded dictation. The course uses the moveable Do system, based on the Kodaly method. Two hours a week.

231, 232. Theory. 2 cr. each

A continuation of 132 introducing chromatic harmony and the basic principles of contrapuntal writing. Creative opportunities continued. Three hours a week.

233, 234. Solfeggio and Ear Training. 2 cr. each

A continuation of 134. Two hours a week.

335. Counterpoint. 2 cr.

The course is devoted to a study of the polyphonic technique of the sixteenth century.

- 336. Counterpoint.** **2 cr.**
A course study concerned with the harmonic contrapuntal technique of the period of J.S. Bach.
- 340. Orchestration.** **2 cr.**
A study of the basic problems of scoring for individual instruments, particular orchestral choirs, the entire orchestra, and unique instrumental combinations. Analysis of the techniques of orchestration of selected composers of the 18th, 19th, and 20th centuries.
- 440. Jazz Arranging.** **2 cr.**
A study of the basic techniques of scoring for individual instruments and jazz ensembles of various sizes, from small groups to studio orchestra. Special emphasis will be placed on harmonies, voicings, instrumentation and articulations which are characteristic of this kind of music. May be taken in place of Orchestration 340. Offered in the Spring Semester only.
- 426. Jazz Improvisation I.** **2 cr.**
Melodic and harmonic creation of the basis of idiomatic jazz rhythms and articulations, employing elementary and advanced forms, chord structures and chromatic alterations. Permission of instructor required.
- 427. Jazz Improvisation II.** **2 cr.**
Continuation of 426.
- 138, 139. Composition.** **2 cr. each**
The study of writing of musical composition in the smaller forms.
- 238, 239. Composition.** **2 cr. each**
The study and writing of musical composition in the larger forms.
- 338, 339, 438, 439. Composition.** **2 cr. each**
These courses are offered in order to provide gifted young composers an opportunity to receive guidance in the development of advanced compositional techniques. Permission of the chairman of the Theory Department is required.

Music Therapy

- 107. Music Therapy Orientation.** **2 cr.**
An introduction to Music Therapy as practiced in a variety of rehabilitation settings. Observations followed by informal group discussions. Basic theory about the validity of music as therapy; the relationship of theory to practice. Extensive class participation will be required to prove qualification for further, in-depth study of the profession.
- 108. Music in Therapy.** **2 cr.**
A course designed to increase the student's self-identification as a music therapist by weekly assignments to rehabilitation settings. Understanding goals and relationships of treatment or education, learning to make systematic observations through written progress reports, and discussions about specific writings related to personal experiences are included in the course work. Prerequisite: Music Therapy 107.
- 307. Psychology of Music.** **2 cr.**
An exploration of musical behaviors, and to a lesser degree, all other art behaviors of a

variety of cultures and sub-cultures, beginning with the student's personal experience. Extensive class participation will be expected. Prerequisite: Psychology.

308. Influence of Music on Behavior. 2 cr.

A study of the uses of music in society including movies, television, industry, churches, schools, hospitals, etc., and the rationale thereof. Discussion, reading and individual research projects will be assigned. Prerequisites: General Psychology or equivalent and Junior standing.

309. Directed Study in Music Therapy 2 cr.

124, 223, 224, 323, 324, 423, 424. Music Therapy Practicum. 1 cr. each

Supervised field work in an approved agency.

Tamburitza Institute of Folk Arts

154. Introduction to Folklore. 3 cr.

An introductory examination of the definition and scope of folklore studies, and the role of folklore in people's lives. Examined are various forms of folklore and folk expression such as tales, ballads, myths, legends, beliefs, games, proverbs, riddles, folk songs, and folk customs and their roles in societies.

255. Introduction to Balkan Music. 2 cr.

An analytical study of the primitive and traditional folk music of the Balkans, its musical styles, forms and characteristics in terms of its geographical setting and historical background, and its general structure and aesthetics.

256. Introduction to Balkan Dance. 2 cr.

A survey of folk dances of the Balkans highlighting their development, form, indigenous characteristics, differences and similarities from one ethnographic region to another.

147, 148, 247, 248, 347, 348, 447, 448. Tamburitza Ensemble. 1 cr. each

The Tamburitza Ensemble involves the study and performance of music specifically composed and arranged for both small and large Tamburitza string ensembles. It encompasses the fundamental principles and techniques for both playing and teaching the Tamburitza and includes appropriate literature. May be taken by freshmen and sophomores for extra credit or by juniors and seniors for required credit provided that Major Ensemble requirements have been satisfied, and that permission of the conductor has been granted.

NON-MUSIC MAJORS

253. Visual Arts. 3 cr.

Gives students a basic vocabulary in the visual arts (painting, sculpture, architecture, the graphic arts) and to make them conversant with the most important styles they will encounter. During the course of the semester, the course will include several visits to museums and galleries in the Pittsburgh area.

321. Music for the Classroom Teacher. 2 cr.

The aim of this course is to assist the student in gaining an appreciation of the importance of music in the lives of children; a knowledge of fundamental principles of instruc-

tion in music; and a familiarity with the variety of musically enriching experience.

GENERAL EDUCATION

191. Human Physiology.

3 cr.

A study of the fundamental principles of human physiology as a basis for the understanding of artistic expression and music therapy.

491. Physical Science (Acoustics).

3 cr.

A course in the science of sound designed to give the student a knowledge of the basic principles of the nature of sound, its production and transmission. Consideration is also given to the mechanism of hearing and the physical basis of harmony, scales, electronic recording, and reproduction of recorded sound.

Descriptions of courses in English, modern languages, psychology, sociology, and education, required in the several curricula will be found in the College of Liberal Arts and Sciences and School of Education sections of this Catalog.

School of Nursing

HISTORY

Since it is the policy of the University to establish its schools under control of an already established school, the School of Nursing was originally organized in 1935 as a unit in the College of Liberal Arts and Sciences. On March 15, 1937, the Department of Nursing Education was given the status of a separate school with a Dean in charge. On December 3, 1937, the State Board of Education of the Commonwealth of Pennsylvania approved the school and authorized Duquesne University to confer the degree of Bachelor of Science in Nursing and the degree of Bachelor of Science in Nursing Education upon graduates according to the appropriate curriculum. Previously, the School of Nursing offered two programs both leading to the degree of Bachelor of Science in Nursing. Since 1964, the School of Nursing offers one program for both generic nursing students and registered nurse students in which they enroll for courses leading to the degree of Bachelor of Science in Nursing.

PHILOSOPHY

Nursing is a profession which focuses on the maintenance of health; the prevention of illness; and caring for individuals and families who need assistance in coping with their health problems.

Within nursing the professional practitioner utilizes scientific and humanistic theories and concepts in performance of the following skills: interpersonal, teaching, management, observing and recording, manual, and problem solving. These skills are necessary for the functioning of the professional nurse in: assessing client's needs, prescribing and directing a workable plan of approaches to meet those needs, implementing the prescribed plan, collaborating and coordinating with the health team members, and evaluating the effectiveness of care.

The professional nurse is a creative innovator who finds satisfaction in giving service to others, who regularly evaluates self, and who plans for continual growth. The professional nurse should be educated in an institution of higher learning in a program which grants a baccalaureate degree in nursing.

The student is the focus of the curriculum and shares responsibility with the faculty for the creation of an environment conducive to individuality. Throughout the nursing curriculum the faculty strives to facilitate the student's growing, learning, adapting, and becoming. Liberal arts courses in the humanities, natural sciences, and behavioral sciences not only aid in the student's development but also serve as a foundation for and are an integral part of the professional nursing curriculum. To assist the student's continuing development, provision is made for electives throughout the program.

Professional nursing courses focus on adaptation with the concepts of life continuum, intersubjectivity and individuality interwoven throughout. The student has

opportunities to learn how one's development on the life continuum can be affected by health and illness and what can be done to aid a person and his family in the process of adaptation.

OBJECTIVES

The objectives of the program, designed to prepare students to assume the role of professional nurses in a variety of settings and also provide foundation for further study in nursing, are to:

1. Formulate a philosophy of life that reflects concern for self and others.
2. Synthesize a philosophy of professional nursing.
3. Actively participate within a variety of health care systems.
4. Contribute to nursing research as a means for furthering the profession of nursing.

ADMISSION REQUIREMENTS

The specific entrance requirements for admission are:

1. The applicant's high school curriculum must include a minimum of 16 units distributed as follows:

English	4 units required
Social Studies	3-4 units recommended
Language	2 units recommended
Mathematics and Science	6 units recommended (1 unit Chemistry and 1 unit Algebra required)

2. A candidate must have been graduated from an approved secondary school in the upper two-fifths of the class, and must have demonstrated exemplary personal conduct in the institution.

3. The primary consideration for admissions is the secondary school academic record. This is considered to be the most important criterion of success at Duquesne University. It is the desire of the Admissions Committee to admit those candidates who possess qualities of character and intellect and who show promise of development into useful and contributing citizens.

4. A candidate must present satisfactory scores on the required College Entrance Examination Board Scholastic Aptitude Test in accordance with the standards adhered to by the University.

In specific instances, and at the discretion of the Committee on Admissions, the genuine equivalent of these requirements may be accepted in lieu of the foregoing precise requirements.

ADMISSION OF REGISTERED NURSE STUDENTS

Registered nurses who have completed a diploma or associate degree program in nursing who wish to pursue study for a bachelor's degree must follow general admission procedures. In addition, they should:

1. Present evidence of registration as a professional nurse in one state or territory before admission or during the first semester of enrollment.

- 2. Submit an official copy of school of nursing transcript.
- 3. Submit an official copy of transcript from previous college or university attended, if applicable.
- 4. Submit a recommendation for collegiate study from the director of nursing of the school of nursing from which the student was graduated or recommendation from present employer.
- 5. Arrange for a personal interview with the Academic Advisor in the School of Nursing, if applicant resides within a reasonable distance.

SECOND BACCALAUREATE DEGREE PROGRAM

Applicants holding a baccalaureate degree with a major other than nursing must follow transfer student admission procedures (see page 9). In addition they must:

- 1. Arrange for a personal interview with the Academic Advisor in the School of Nursing.
- 2. Submit a letter to the Student Standing Committee of the School of Nursing, stating reason(s) for pursuing the baccalaureate degree in nursing.

SPECIAL FEES

All figures are for one semester only. For yearly total, double amounts where applicable.

CHEMISTRY LABORATORY COURSES

Laboratory Fee \$20

BIOLOGY LABORATORY COURSES

Laboratory Fee \$20

(One \$5.00 breakage card a semester will cover laboratory courses in biology, chemistry and physics.)

ANATOMY AND PHYSIOLOGY 209, 210

Laboratory Fee \$20

Breakage Deposit \$ 5

CHALLENGE EXAMINATIONS each credit hour—\$10
(non-refundable)

MISCELLANEOUS COSTS

- Uniforms, approximate total cost \$50.
- Special health requirements.
- Books and miscellaneous supplies.
- Transportation to and from agencies, approximate cost \$5 weekly.
- School of Nursing pin for graduation, approximate cost \$15.
- Student Liability Insurance (Professional), approximate cost \$41 for three year period.

STUDENT ORGANIZATIONS

The nursing student is a member of the general student body and may select and participate in any of the campus organizations. There are numerous social sororities and organizations as well as professional organizations.

DUQUESNE UNIVERSITY NURSES ASSOCIATION—DUNA is open to all nursing students who are encouraged to participate through their class organizations. Faculty moderators act as liaison persons between the student classes and faculty. Opportunities for the development of leadership qualities are given. Through this organization, students are eligible to join SNAP—the Student Nurse Association of Pennsylvania.

ALPHA TAU DELTA is a national professional fraternity for persons in nursing. Theta Chapter was chartered on the Duquesne University campus on April 21, 1938. Only full-time students who have completed a minimum of one semester in the School of Nursing with a cumulative quality point average of 2.5 are eligible.

HONOR AWARDS

In addition to graduation honors, these awards are presented at Honors Day:

The Mary W. Tobin Gold Medal and *The Dean Johnson Memorial Medal* are awarded annually to two outstanding seniors chosen by the faculty for general excellence in nursing. *The Mary W. Tobin Medal* is sponsored by Theta Chapter of Alpha Tau Delta National Professional Fraternity for persons in nursing.

GRADUATION REQUIREMENTS

Specific requirements for the Bachelor of Science in Nursing degree are:

1. Two courses in English and one course in speech.
2. Four courses in philosophy and theology. One course in theology is required for Catholic students.
3. Seven courses in the behavioral sciences including human development, principles of management, two or three courses in psychology and two or three courses in sociology.
4. A minimum of 14 credits selected from chemistry, biology, microbiology, and/or physics.
5. Nursing Sciences: Anatomy and Physiology, Pathophysiology and Nutrition.
6. Nursing Major: Nursing 303, 305, 307, 401 and Nursing electives.

Degree requirements must be completed within ten years after initial enrollment. At the end of the ten-year period, the student's record is re-evaluated in terms of the curriculum in effect at that time, and the student is advised of any additional requirements for graduation. The responsibility for fulfilling degree requirements rests with the student.

PROGRAM OF STUDY

The School of Nursing offers a program with a major in nursing leading to a baccalaureate degree to qualified high school graduates, registered nurses, and non-nursing baccalaureate degree graduates who wish to prepare themselves for professional responsibilities in beginning positions in nursing. The program includes four years of study, and is designed to provide the student with the knowledge and skills needed to function as a professional nurse generalist upon graduation. The foundations in general and professional education acquired in this program provide a basis for the graduate to progress to positions of increasing responsibility and to undertake graduate study.

The curriculum design is basically that of a professional education program. Selected courses in the humanities and the behavioral, natural, and social sciences provide the foundation for the nursing major. Professional nursing courses, which constitute the nursing major, include theory and practice in the nursing care of individuals and families. Learning opportunities are provided in the hospital, in the home, and in the community. To strengthen and enrich the personal and professional development of the student, courses in the liberal arts are taken throughout the program.

The faculty of the School of Nursing conduct all of the professional nursing courses and also guide and direct the clinical nursing learning experiences. Several hospitals and agencies cooperate with the School of Nursing to provide a wide selection of excellent clinical nursing practice. Some of these are: Allegheny General Hospital, Central Medical Health Services, Mercy Hospital, St. Clair Memorial Hospital, Western Pennsylvania Hospital, St. Francis General Hospital, Leech Farm Veterans' Administration Hospital, St. Joseph's Division of South Hills Health Center, Magee-Women's Hospital, Forbes Health System: Columbia Health Center and Pittsburgh Health Center, the Visiting Nurse Association of Allegheny County, the Allegheny County Health Department, and Home for Crippled Children.

Upon the successful completion of this program, graduates will be eligible to write the examination for licensure in the state in which they wish to practice.

The faculty reserves the right to make changes in the curriculum and program requirements which it believes are in keeping with the changing health needs of society and/or the best interests of the students and the School to maintain quality professional nursing education.

REGISTERED NURSES

Registered nurse students who are graduates of a diploma or associate degree program in nursing may receive credit for selected nursing courses depending on evaluation of the previous educational program and satisfactory achievement on challenge examinations offered by the School of Nursing. Non-nursing courses taken at another college or university may be considered for transfer of credit, subject to University policy regarding transfer students stated elsewhere in this catalog.

SUGGESTED CURRICULUM PLAN

Freshman Year

Fall Semester

Science (laboratory) 4 cr.
 English 3 cr.
 Psychology 3 cr.
 Science (laboratory) 4 cr.

14 cr.

Spring Semester

Science (laboratory) 4 cr.
 English 3 cr.
 Sociology 3 cr.
 Science (laboratory) 4 cr.

14 cr.

Sophomore Year*Fall Semester*

Anatomy & Physiology	4 cr.
Human Development	3 cr.
Nutrition	3 cr.
Sociology	3 cr.
Philosophy	<u>3 cr.</u>
	16 cr.

Spring Semester

Anatomy & Physiology	4 cr.
Pathophysiology	3 cr.
Theology	3 cr.
Psychology	3 cr.
Philosophy	<u>3 cr.</u>
	16 cr.

Junior Year*Fall Semester*

Commonalities in Nursing	9 cr.
Speech	3 cr.
Principles of Management	<u>3 cr.</u>
	15 cr.

Spring Semester

Nursing & The Family I	9 cr.
Philosophy	3 cr.
Psychology or Sociology	<u>3 cr.</u>
	15 cr.

Senior Year*Fall Semester*

Nursing & The Family II	9 cr.
Electives	6 cr.
	<u> </u>
	15 cr.

Spring Semester

Nursing Electives	9 cr.
Systematic Inquiry into Nursing	3 cr.
Electives	<u>3 cr.</u>
	15 cr.

CURRICULUM STANDARDS

To progress to the junior clinical nursing courses, a minimum QPA of 2.0 is required.

To remain in good standing in the School of Nursing, the student must attain a minimum of a C grade in each clinical nursing course.

A Pass/Fail grade is given in clinical practice. An F in either theory or clinical practice will result in an F grade for the course.

The School of Nursing faculty reserves the right to withdraw any student from the nursing major who, in its opinion, has not progressed satisfactorily in clinical practice, even though the quality point average meets required standards.

COURSE DESCRIPTIONS

Course descriptions for courses in liberal arts and sciences may be found in the College of Liberal Arts and Sciences section, pages 48 to 110.

209, 210. Anatomy and Physiology.**4 cr. each**

A study of the normal human body structure and function. Laboratory includes physiological experiments, dissection of preserved and fresh specimens, and a study of microscopic slides. Lecture, four hours; Laboratory, three hours each semester.

- 211. Pathophysiology.** **3 cr.**
Introduction to the basic scientific concepts of the disease process. Lecture, three hours.
Prerequisite: 209 or 210.
- 255. Nutrition.** **3 cr.**
Nutrition principles and their importance to all ages; factors influencing food habits; exploration of ways in which nurses may help families and individuals apply nutrition facts for increased health and well-being; recent research in relation to such national problems as heart disease, obesity, and increased life span. Lecture, three hours.
- 303. Commonalities in Nursing.** **9 cr.**
The beginning nursing course which provides care content common to nursing practice. The nursing process is the unifying focus and is the means by which care is provided to clients/families in various settings. Prerequisites: 209, 210, 211, 255. Lecture, five hours; Laboratory, 12 hours.
- 305. Nursing and the Family I.** **9 cr.**
Designed to enable nursing students to utilize the nursing process in family situations involving the childbearing and childrearing years. Emphasis is placed on prevention of illness, promotion of health, and adaptation of family members to varying life experiences within the expanding family. Lecture, four hours; Laboratory 15 hours. Prerequisite: 303.
- 307. Nursing and the Family II.** **9 cr.**
Provides nursing students with opportunities to implement the nursing process with adult clients and their families in a variety of settings. The health care problems encountered throughout the life span of the adult are studied so that the role of the nurse regarding health promotion for this age group can be demonstrated. Prerequisite: 303. Lecture, four hours; Laboratory, 15 hours.
- 401. Systematic Inquiry.** **3 cr.**
An introduction to research in nursing. It considers the research process, the use of scientific criteria in evaluating current nursing research, and application of various methodologies and techniques. Prerequisites: 303, 305, 307. Offered Spring Semester only.

School of Pharmacy

HISTORY

Plans for establishing a School of Pharmacy were instituted in 1911, when the charter of the University was amended and authority obtained to grant degrees in Pharmacy. On April 20, 1925, the final work of organizing the School of Pharmacy was completed. The first class was received September 21, 1925.

The Duquesne University School of Pharmacy is housed in Richard King Mellon Hall of Science, whose design by master architect Mies van der Rohe won the "Laboratory of the Year" award for 1969 in the annual Industrial Research, Inc. survey of new science buildings across the country. The School's specialized facilities include the Hugh C. Muldoon Model Pharmacy, animal operating room, electronics laboratory equipped with individual kits, bionucleonics laboratory, eight additional teaching laboratories, and a manufacturing pharmacy laboratory containing basic pharmaceutical manufacturing equipment and separate tableting and aerosol technology rooms.

PHILOSOPHY AND OBJECTIVES

The School of Pharmacy, as an integral part of the University, embodies as its own, the aims and objectives set forth by the University. Its primary purpose is to afford men and women with an education in the fields of Pharmacy and its allied sciences which will enable them to meet both the present and future demands of their chosen profession. Through a well integrated curriculum which includes professional elective courses, laboratory work, careful supervision by experienced teachers, and coursework in the liberal and cultural areas, the School of Pharmacy seeks to develop the student both professionally and individually. The comprehensive and specialized nature of this curriculum offers the Pharmacy graduate a choice of occupations within the profession and its closely allied fields, as well as an adequate foundation for the continuation of studies on a graduate level in one of many areas.

Within the profession of pharmacy, he may become a community pharmacist, hospital pharmacist, or a pharmacist in government service. Many pharmacists find employment as medical service representatives for drug manufacturers. Some enter the wholesale drug business and the pharmaceutical manufacturing industry. Graduates in pharmacy are exceptionally well-qualified to become agents for the enforcement of narcotic and pure food and drug laws. Many pharmacists find employment as chemists or biologists in industrial and research organizations in allied fields; others enter the profession of teaching. Additional study is required for some of these positions. A few pharmacists continue their study in other health professions leading to a second professional degree or an advanced degree in the basic pharmaceutical and medical sciences.

The Graduate School of Liberal Arts and Sciences of Duquesne University offers programs through the School of Pharmacy leading to the Doctor of Philosophy degree in pharmaceutical chemistry, and Master of Science degree in the fields of pharmacy, pharmaceutical chemistry, and pharmacology-toxicology.

The School of Pharmacy directs the professional program leading to the Doctor of Pharmacy degree in Hospital Pharmacy. These graduates are qualified for placement in clinical pharmacy positions in hospitals across the nation.

Medical technologists work under the direction of a pathologist or clinical scientist. In the field of Medical Technology positions are available in hospital and industrial laboratories preparing tissue samples and slides for microscopic study, taking blood samples, storing plasma, and keeping records of tests.

In the field of Radiological Health, positions of health physicist are available in hospitals and any laboratories and industrial facilities which use radioisotopes.

PROGRAMS

BACHELOR OF SCIENCE IN PHARMACY

The School of Pharmacy offers a Bachelor of Science degree in Pharmacy upon completion of the undergraduate professional program. The first two years encompass many courses offered by the College of Liberal Arts and Sciences in addition to several professional courses. The latter three years of study are taught mainly by the pharmacy faculty, with electives being available from both that faculty and all other schools of the University. Students are enrolled in the School of Pharmacy for all years. Transfer students are enrolled according to qualifications up to the start of the third year of the five-year sequence. Legal requirements of all states are met with regard to graduation from an accredited college of pharmacy. Licensure in the several states may be acquired by meeting specific additional requirements of each particular state.

Residency Requirements

The pharmacy curriculum has been designed to provide a sequence of courses leading to professional competence. The minimum time period in which this may be accomplished has been determined by the faculty to be three years of full-time residency. This residency requirement for the final years of the professional curriculum is in accordance with a policy statement ratified by the American Association of Colleges of Pharmacy and followed by all colleges of pharmacy in establishing minimum residency requirements, as well as guidelines for professional education.

Curriculum

A minimum of 15 credits in the combined areas of humanities and social sciences is required for graduation from the School of Pharmacy (nine in the humanities, including theology, and six in the social sciences, including economics.) Courses for fulfilling the theology requirement are listed under the Department of Theology in the College of Liberal Arts and Sciences section of this Catalog. A minimum of 160 credits is required for graduation.

The student is cautioned to seek regular advice from the faculty and to keep a record of credits earned and the calculated averages. The School assumes no responsibility for such errors appearing in student records which may prevent the student from being graduated.

First Year

<i>Fall Semester</i>	D*	L*	C*	<i>Spring Semester</i>	D	L	C*
101 English Composition	3	-	3	102 English Composition	3	-	3
105 Mathematics	4	-	4	115 Mathematics	4	-	4
111 General Biology	3	4	4	112 General Biology	3	4	4
121 General Chemistry	3	4	4	122 General Chemistry	3	8	5
1 Pharmaceutical Orientation	1	-	1		13	12	16
	14	8	16				

Second Year

<i>Fall Semester</i>	D	L	C*	<i>Spring Semester</i>	D	L	C*
201 General Physics	4	2	4	202 General Physics	4	2	4
205 Organic Chemistry	3	4	4	206 Organic Chemistry	3	4	4
101 Elements of Economics	2	1	3	Humanities Elective	6	-	6
14 Pharmaceutical Math.	3	-	3	Theology or Elective	3	-	3
Social Science Elective	3	-	3		16	6	17
	15	7	17				

Third Year

<i>Fall Semester</i>	D	L	C*	<i>Spring Semester</i>	D	L	C*
11 Physical Pharmacy	3	4	4	12 Physical Pharmacy	3	4	4
13 Pharmaceutical Law	3	-	3	16 Biochemistry	3	4	4
17 Anatomy and Physiology	3	-	3	18 Anatomy and Physiology	4	-	4
20 Anatomy and Physiology Laboratory	-	3	1	35 Medical Microbiology	3	3	4
Elective	3	-	3		13	10	16
	12	7	14				

Fourth Year

<i>Fall Semester</i>	D	L	C*	<i>Spring Semester</i>	D	L	C*
21 Biopharmaceutics and Dosage Forms	3	4	4	22 Biopharmaceutics and Dosage Forms	3	4	4
33 Pharmacology	3	-	3	34 Pharmacology	4	-	4
26 Natural Products	3	3	4	28 Organic Pharmaceutical Chemistry	3	-	3
27 Analytical Chemistry	3	7	4	37 Pharmacy Administration	3	-	3
	12	14	15	Elective	3	-	3
					16	4	17

*D — Didactic hours L — Laboratory Hours C — Credit hours

Fifth Year

<i>Fall Semester</i>	D	L	C*	<i>Spring Semester</i>	D	L	C*
23 Medicinal Chemistry	3	-	3	24 Medicinal Chemistry	3	-	3
31 Professional and Clinical Practice	3	6	4	32 Professional and Clinical Practice	3	6	4
39 Practical Pharmacy I Elective	-	-	3	36 Public Health	3	-	3
			6	41 Practical Pharmacy II Elective	-	-	3
	6	6	16				3
					9	6	16

Curriculum Majors

During the fourth year (earlier if possible) each pharmacy student is required to select a curriculum major from one of the following major areas: Community Practice, Institutional Practice, Industrial Practice, Radiopharmacy, or Pre-Graduate Study. The student must complete a minimum of nine credit hours in courses listed for that major.

The following courses are approved for the respective major areas:

1. *Community Practice*

- 29—Emergency Treatment
- 58—Community Practice I
- 59—Community Practice II
- 101—Economics
- All—Psychology
- All—Sociology
- 53—Clinical Pharmacy
- 201—Principles of Management
- 39, 41—Practical Pharmacy I, II
- 567, 568—Clinical Pharmacology

2. *Institutional Practice*

- 52—Hospital Pharmacy
- 53—Clinical Pharmacy
- 530—Principles of Hospital Management
- 501—Manufacturing Pharmacy
- 56—Clinical Chemistry
- 563—Pathology
- 201—Principles of Management
- 539—Bionucleonics
- 567-568—Clinical Pharmacology
- 39, 41—Practical Pharmacy I, II

3. *Industrial Practice*

- 501—Manufacturing Pharmacy
- 505—Methods of Pharmaceutical Control
- 562—Analytic Methods (Statistics and Computer Technology)
- 502—Pharmaceutical Formulation and Development

*D — Didactic hours L — Laboratory Hours C — Credit hours

Courses are to be completed in the designated sequence.

Minimum credits for B.S. in Pharmacy Degree — 160; sufficient elective courses must be taken to satisfy the minimum credit requirements.

539—Bionucleonics

525—Electronics for Scientific Instrumentation

39, 41—Practical Pharmacy I, II

4. *Radiopharmacy*

19—Electronics for Health Sciences

539—Bionucleonics

540—Advanced Bionucleonics and Radio Pharmaceuticals

541, 542—Radiological Health

431—Introduction to Biostatistics

5. *Pre-Graduate Study*

Students who elect this option must consult with the chairman of the department of their area of interest in order to select courses most adaptable to the program they desire to pursue. A combined B.S./M.S. program is available to qualified students.

BACHELOR OF SCIENCE IN MEDICAL TECHNOLOGY

This program, leading to the degree B.S. in Medical Technology, is a joint effort between Duquesne University and Mercy Hospital, Pittsburgh, Pa. The program involves completion of 125 credits, with 30 of the credits being taken in Mercy Hospital's School of Medical Technology in the fourth year of the program. Graduates from the program are eligible for the National Examinations conducted by the Board of Registry of Medical Technologists.

The School of Medical Technology at Mercy Hospital is approved by the Board of Schools of Medical Technology which acts as adviser to the Council on Medical Education of the American Medical Association. It is responsible for establishing and maintaining high standards of education in A.M.A.-approved schools of medical technology.

Students in the program enroll in the School of Pharmacy as medical technology majors. These students are advised through the office of the Dean of the School of Pharmacy.

Admission to the fourth year of the program will be on a competitive basis with these as the determining factors:

1. A student must have a quality point average of 2.5 in the sciences.
2. No student with a grade lower than C in any chemistry course will be considered for admission.
3. Written recommendations.
4. Personal interview with the Education Coordinator of Mercy School of Medical Technology.

Applications for entrance to the fourth year are to be made before October 31 of the third year. Information about applications is available from the School Office or the Education Coordinator for Medical Technology.

During the fourth year of the program, students will register and pay tuition to Duquesne University. They will be permitted to reside in the University dormitories and enjoy all of the privileges of Duquesne University students.

Failure in any of the major courses included in the fourth year will lead to immediate dismissal from the Mercy School of Medical Technology.

Curriculum

First Year

<i>Fall Semester</i>	D	L	C*	<i>Spring Semester</i>	D	L	C*
101 English Composition	3	-	3	102 English Composition	3	-	3
105 Basic Math	4	-	4	115 Calculus I	4	-	4
111 General Biology	3	4	4	112 General Biology	3	4	4
121 General Chemistry	3	4	4	122 General Chemistry	3	8	5
	13	8	15		13	12	16

Second Year

<i>Fall Semester</i>	D	L	C*	<i>Spring Semester</i>	D	L	C*
201 General Physics	4	2	4	202 General Physics	4	2	4
205 Organic Chemistry	3	4	4	206 Organic Chemistry	3	4	4
Humanities Elective	3	-	3	35 Medical Microbiology	3	3	4
Social Science Elective	3	-	3	Humanities Elective	3	-	3
Theology or Elective	3	-	3		13	9	15
	16	6	17				

Third Year

<i>Fall Semester</i>	D	L	C*	<i>Spring Semester</i>	D	L	C*
17 Anatomy and Physiology	3	-	3	16 Biochemistry	3	3	4
20 Anatomy and Physiology Laboratory	-	3	1	18 Anatomy and Physiology	4	-	4
27 Analytical Chemistry Elective	3	7	4	19 Electronics for Health Sciences Electives	3	3	4
	9	-	9		3	-	3
	15	10	17		13	6	15

Fourth Year

The fourth year of the program will begin in June and continue for twelve consecutive months. Courses and laboratory assignments will be held primarily at Mercy Hospital. The following syllabus will be covered with 30 credits awarded for completion of the courses.

61 Clinical Chemistry	7 credits
62 Urinalysis	2 credits
63 Hematology	5 credits
64 Blood Banking	3 credits
65 Bacteriology	5 credits
66 Parasitology	2 credits
67 Immunology	2 credits
69 Mycology	1 credit

*D — Didactic hours L — Laboratory hours C — Credit hours

70 Virology	1 credit
71 Radioisotopes	<u>2 credits</u>
Total	30 credits

All of the required course work, laboratories, supplies, facilities, and faculty for the fourth year of the program will be provided by Mercy School of Medical Technology. The faculty of the School of Medical Technology is recognized as faculty at Duquesne University.

BACHELOR OF SCIENCE IN RADIOLOGICAL HEALTH

Since 1972 the School of Pharmacy has offered a four-year 123-credit program leading to a Bachelor of Science degree in Radiological Health. Graduates from the program qualify for positions of health physicist in any facilities using radioactive isotopes.

Students in the radiological health program enroll in the School of Pharmacy as radiological health majors. These students are advised through the office of the Dean of the School of Pharmacy.

Curriculum

First Year

<i>Fall Semester</i>	D	L	C*	<i>Spring Semester</i>	D	L	C*
101 English Composition	3	-	3	102 English Composition	3	-	3
105 Basic Mathematics	4	-	4	115 Calculus I	4	-	4
111 General Biology	3	4	4	112 General Biology	3	4	4
121 General Chemistry	3	4	4	122 General Chemistry	3	8	5
	<u>13</u>	<u>8</u>	<u>15</u>		<u>13</u>	<u>12</u>	<u>16</u>

Second Year

<i>Fall Semester</i>	D	L	C*	<i>Spring Semester</i>	D	L	C*
211 General Analytical				212 General Analytical			
Physics	3	3	4	Physics	3	3	4
205 Organic Chemistry	3	4	4	206 Organic Chemistry	3	4	4
116 Calculus II	4	-	4	215 Calculus III	4	-	4
Theology or Elective	3	-	3	Humanities Elective	3	-	3
	<u>13</u>	<u>7</u>	<u>15</u>		<u>13</u>	<u>7</u>	<u>15</u>

Three credits in theology are required for all students.

Third Year

<i>Fall Semester</i>	D	L	C*	<i>Spring Semester</i>	D	L	C*
17 Anatomy and Physiology	3	-	3	16 Biochemistry	3	3	4
20 Anatomy and Physiology Laboratory	-	3	1	18 Anatomy and Physiology	4	-	4
216 Differential Equations	3	-	3	539 Bionucleonics	3	3	3
225 Fundamentals of Statistics	3	-	3	Electives	6	-	6
Electives	6	-	6		16	6	17
	15	3	16				

Fourth Year

<i>Fall Semester</i>	D	L	C*	<i>Spring Semester</i>	D	L	C*
306 Applied Electronics	1	2	2	411 Ecology	3	-	3
431 Intro. to Biostatistics	3	-	3	51 Radiological Health Practice	-	16	4
473 Atomic Physics	3	-	3	483 Nuclear Physics	3	-	3
540 Advanced Bionucleonics and Radiopharmaceuticals	3	3	3	542 Radiological Health II	3	4	4
541 Radiological Health I	4	-	4		9	20	14
	14	5	15				

ADMISSION

Students who plan to enter any of the programs offered by the School of Pharmacy are encouraged to meet with Dean of the school for a personal interview. Entrance requirements are listed under Admissions Policies in the General Information section of this catalog. Applications should be submitted as early in the year of matriculation as possible.

The National Pharmacy College Admissions Test (PCAT) may be taken by applicants. Results should be reported to the Admissions Office and to the School of Pharmacy. The test is not required for admission to the School, but the results are used by advisement personnel to assess the level of knowledge in pertinent areas related to the program. Superior performance in certain topics will alert the student to enroll for advanced placement examinations.

*D — Didactic hours L — Laboratory Hours C — Credit Hours

The School of Pharmacy admits students into each of the first three years of the pharmacy, medical technology and radiological health baccalaureate programs. Procedures for entrance are outlined under Application Procedures in the General Information section.

All transfer students must be interviewed by the Dean or Assistant Dean of the School of Pharmacy. Students intending to transfer into the School of Pharmacy should prepare themselves by completing the program of courses, or their equivalents, presented in the curricula of interest. Advisors at the School of Pharmacy are available to meet with students attending other institutions to suggest plans of study which will qualify them for future placement in the School's programs.

Pharmacy students in good standing at any accredited college of pharmacy and eligible to continue their studies at that institution may transfer to Duquesne University School of Pharmacy upon written recommendation of their Dean and fulfillment of all requirements for transfer students as determined by the Admissions Committee. In all cases transfer applicants must have been granted honorable dismissal from their previous institution and have the academic average currently required for admission to the programs in which they are interested.

Transfer pharmacy students must fulfill a residence requirement of one year or more depending on their sequence of professional courses. This sequence extends through a minimum of three academic years of residence in an accredited college of pharmacy. In extenuating circumstances and with the permission of the School of Pharmacy Student Standing Committee, a waiver of the three years of residence required by the American Association of Colleges of Pharmacy will be sought by the faculty on behalf of the student. Failure to request and obtain such a waiver requires the pharmacy students to complete a minimum of six semesters in residence as full-time students.

Advanced credit may be allowed for those courses which appear in the Duquesne curriculum. No credit is allowed in any subject in which a grade lower than C was earned or for a course not equivalent to one among the School's curricula. Transfer applicants must have completed a minimum of 30 credit hours for entrance into the second year and 60 credit hours for entrance into the third year.

Advanced standing is conditional until the student completes a minimum of one semester's work (16 semester hours). If his work proves unsatisfactory, the student will be requested to withdraw.

Applicants who have completed advanced courses in high school are encouraged to take advanced placement tests as detailed under College Level Examination Program in the General Information section.

LABORATORY FEES

Required laboratory courses scheduled by all schools of the university are subject to fees as published. Pharmacy laboratories require a fee of \$30 each a semester. Other courses offered in the program of medical technology and radiological health are subject to special fees. No laboratory fees are assessed for courses scheduled in the fourth year of the medical technology program.

PHARMACY ACTIVITIES FEE

Instituted by student request, this fee of \$25 a semester covers such miscellaneous items as local and national Student American Pharmaceutical Association dues and journal subscription; laboratory jacket rental and laundry fees; class dues and support of the pharmacy student newsletter, *Phorum*; and travel expenses for one required field trip to a pharmaceutical manufacturing firm. Payment is made at registration each semester. This fee is assessed only to those students in the last three years of the pharmacy program.

REGULATIONS

Students in the School of Pharmacy are preparing themselves for entry into a respected health profession where the highest degree of character and sense of responsibility are basic requirements. As such, they are expected to conduct themselves, at all times, in a manner befitting this position and according honor to it. For these reasons, the School of Pharmacy insists on strict adherence to the following regulations:

1. *Class Attendance*

Regular class attendance is normally essential for maximum educational advantage and is strongly encouraged. The responsibility for all course material rests wholly with the student. Under no circumstances will class attendance be used as the basis for altering a grade in a course. This principle shall not modify the prerogative of each instructor to establish policy for attendance at tests, examinations, class lectures, deadlines for reports, and other specific school or course requirements.

A student who is absent is expected to complete all of the work in the course. It is the student's responsibility to make up all assignments and to be familiar with any instructions which may be given in his absence.

2. *Academic Standards*

All students who are admitted to the School of Pharmacy must maintain a 2.0 QPA (quality point average) in the required courses in the professional pharmacy curriculum, throughout the program. Students who do not achieve a 2.0 QPA by the end of the first professional year may be admitted to the second year on a probationary basis. No student will be admitted to the third, fourth, or fifth years of the program with less than a 2.0 QPA.

3. *Required Programs*

Pharmacy students in the fourth year of the curriculum are required to participate in one industrial visit arranged by the School. The School of Pharmacy arranges for students to participate in a special course in surgical appliance fittings offered by a field representative of a manufacturer of such devices. The biennial programs are required for all pharmacy students in the last two years of the curriculum. Record of participation is made in the students' permanent files.

STUDENT ORGANIZATIONS

THE STUDENT AMERICAN PHARMACEUTICAL ASSOCIATION whose membership includes all pharmacy students registered in the last three years of the School of Pharmacy aims to promote their interests, scholastic, social and professional. Under its auspices, many worthwhile events are arranged during the school year. The executive committee meets regularly with the Dean and the faculty moderator to act as liaison between students and faculty. The annual membership fee includes one year's student membership to the American Pharmaceutical Association and a year's subscription to its Journal. Interested pharmacy students enrolled in their first and second years at the University are also eligible for membership.

THE ALPHA BETA CHAPTER OF RHO CHI, national pharmacy honor society at Duquesne University, was organized to promote the advancement of the pharmaceutical sciences. Pharmacy students who have completed three and one-half years of work at the University level and have achieved a B average are eligible for membership. A maximum of 20 per cent of the class enrollment may be admitted to membership. Doctor of pharmacy candidates are eligible under the same conditions. Faculty and graduate students in the pharmaceutical sciences may also be invited to join.

TAU CHAPTER OF LAMBDA KAPPA SIGMA, an international pharmaceutical fraternity for women, was established at Duquesne University in 1932. The organization numbers among its members some of the most outstanding women in pharmacy. Its purposes are to promote the profession of pharmacy and to create a center of culture and enjoyment for its members.

THE BETA GAMMA CHAPTER OF PHI DELTA CHI, an international professional pharmaceutical fraternity, was chartered at Duquesne University in 1960. The fraternity endeavors to integrate academic, spiritual and social activities and thereby foster the highest professional and personal ideals among its members. Membership is open to students in pharmacy.

THE DELTA EPSILON CHAPTER OF KAPPA PSI PHARMACEUTICAL FRATERNITY was chartered in 1967. This international fraternity strives to develop industry, sobriety, and fellowship and to foster high ideals, scholarship, and pharmaceutical research while supporting all projects advancing the profession of pharmacy. Membership is open to students in pharmacy.

CLASS ORGANIZATIONS. Each of the five classes is an officially recognized organization in the School of Pharmacy. Each class elects its own officers and conducts such programs and affairs as its members deem desirable toward achieving its goals. All students are included in these organizations regardless of major curriculum.

HONOR AWARDS FOR GRADUATING STUDENTS

Allegheny Wholesale Drug Company Award. Annually an award of \$25 is presented to the graduate who has shown outstanding ability and interest in the field of pharmacognosy.

American Institute of the History of Pharmacy Award. A recognition certificate and gift membership is awarded annually by the American Institute of the History of Pharmacy for superior achievement in pharmaco-historical study or activity.

American Pharmaceutical Association Award. A certificate of recognition is presented annually to the graduate who has made the most significant contribution to the Student American Pharmaceutical Association at Duquesne University.

Bernard and Blanche Schiller Award in the Humanities and Social Sciences. An award of \$25 is presented annually to the graduate who has demonstrated an understanding of the value of the humanities and social sciences in his development as a professional person. This award is to be used for the purchase of books on any aspect of the humanities in which the student is interested.

Mary McPartland Beck Award. An award of \$25 is presented annually to the graduate who has shown outstanding ability and interest in the clinical practice of pharmacy.

Bristol Award. An award is presented annually by the Bristol Laboratories, Inc., New York City, to a Doctor of Pharmacy candidate for excellence in scholastic achievement.

Bristol Award. A copy of a standard reference book is awarded annually by the Bristol Laboratories, Inc., New York City, to the graduate who has in the opinion of the faculty attained unusual distinction in the work in pharmaceutical administration.

Faculty Award. The faculty of the School of Pharmacy may present an appropriate award to an outstanding member of the graduating class who has displayed exceptional qualities of academic excellence and a QPA of over 3.75.

Maurice H. Finkelp pearl Award. An award of \$50.00 is presented annually to a student who intends to practice Community Pharmacy.

Galen Society Award. The Galen Society of Pittsburgh annually offers two \$25 awards to the two members of the graduating class who have achieved the highest standing in the departments of pharmacology and pharmaceutical chemistry.

Samuel W. Curtis Award. An award of \$25 is presented annually to the graduate who has shown outstanding ability and interest in the field of pharmaceuticals.

Johnson and Johnson Award. A replica of a rare Revolutionary War Mortar and Pestle is awarded annually to an outstanding student of Pharmacy Administration.

Lilly Achievement Award. A gold medal is presented annually to a member of the graduate class who has demonstrated superior scholastic and professional achievement as well as qualities of leadership.

Merck Sharp and Dohme Award. Each year Merck and Company, Rahway, New Jersey, offers a set of valuable reference books to a member of the graduating class who attains the highest average in medicinal chemistry.

Rexall Award. The Rexall Drug Company of Los Angeles, California, annually awards a bronze mortar and pestle to a graduate who has demonstrated outstanding leadership and interest in the field of community pharmacy.

Rho Chi Award. Alpha Chapter of Rho Chi awards annually a suitably inscribed key to the student who earns the highest general average in all subjects during the first two years of the pharmacy program. The award is presented at a meeting of the Student Chapter of the American Pharmaceutical Association.

Smith Kline & French Laboratories Award. A personalized plaque is presented annually by the Smith Kline & French Laboratories, Philadelphia, Pennsylvania, for superior achievement in Clinical Pharmacy.

James L. Strader Memorial Award. Each year Mrs. Joan V. Ansberry and Marshall Goldstein, proprietors of the James L. Strader Pharmacy, Pittsburgh, present a stainless steel replica of the awardee's diploma to the graduating student who has demonstrated outstanding general intelligence and maturity in the opinion of the graduating class.

Student American Pharmaceutical Association Award. An award of \$5.00 is presented annually to the graduating student who has demonstrated through service, reporting and activity an avid interest in organization work.

Upjohn Award. A suitably inscribed plaque is awarded annually by the Upjohn Company, Kalamazoo, Michigan, for outstanding public service.

Western Pennsylvania Society of Hospital Pharmacists Award. An award of \$25.00 is presented annually to the graduating senior who demonstrates outstanding ability and interest in the area of Hospital Pharmacy.

GRADUATION REQUIREMENTS

A committee of the faculty will review the record of each candidate for graduation to ascertain full compliance with specific School of Pharmacy curriculum requirements and the general University Graduation Requirements, as stated on page 35 of this catalog. This committee will then recommend candidates for faculty certification for graduation or for remedial work to be fulfilled during the last semester of residence. Communications pertaining to this certification may be entered in the Office of the Dean.

STATE LICENSING

PENNSYLVANIA

A candidate for licensure as a Registered Pharmacist in the Commonwealth of Pennsylvania must meet the following requirements before he may be admitted to the licensing examinations which are conducted by the Pennsylvania State Board of Pharmacy:

1. Character—be of good moral character.
2. Professional Training—have a degree in Pharmacy granted by a School or College of Pharmacy, which is accredited by the American Council on Pharmaceutical Education.
3. High School Preparation—have a State Preliminary Certificate certifying to not less than four years of high school work, or the equivalent in approved subjects. The certificate must bear a date not later than November 1 of the year of matriculation.

As evidence of State approval, the candidate must present before November 1 of the year in which the third year of course work in Pharmacy is begun, a Pennsylvania State Preliminary Certificate issued by the Pennsylvania Department of Education at Harrisburg. Such certificates are granted, upon payment to the State

of a five dollar fee, to candidates who have completed an approved four-year high school course. Full instructions for securing the certificate are provided through the School of Pharmacy office to students entering that year. Applicants who cannot satisfy the requirements by furnishing certified records from accredited high schools may make up deficiencies by passing the examinations given for this purpose by the Credentials Evaluation Division of the Department of Education of the Commonwealth of Pennsylvania. Further information regarding these examinations, fees, dates, etc. may be obtained by writing to the Credentials Evaluation Division, Department of Education, Commonwealth of Pennsylvania, Box 911, Harrisburg, Pennsylvania 17120.

4. Practical Experience and Internship—any person enrolled as a student of pharmacy in an accredited college shall at the end of the second year of College file with the State Board of Pharmacy an application for registration as a pharmacy intern.

To insure proficiency in the practical aspects of pharmacy, the State Board shall by regulation prescribe internship requirements which must be satisfactorily completed prior to issuance of a Pharmacist's License. The Board shall specify the period of time of not less than six months nor more than one year and when and in what manner the internship shall be served.

Specific information concerning practical experience requirements as well as all other requirements concerning licensure may be obtained from the State Board of Pharmacy, Department of State, Box 2649, 279 Boas Street, Harrisburg, Pennsylvania 17120.

STATES OTHER THAN PENNSYLVANIA

According to law, the licensing of an applicant seeking to become registered as a pharmacist is under the sole jurisdiction of the state in which he seeks to practice. Although the requirements for licensure in the Commonwealth of Pennsylvania are similar to those of other states, differences may exist. Space limitations preclude a complete listing of the requirements of other states and the District of Columbia here. The candidate for licensure in another state is advised to consult the Board of Pharmacy in that particular state for complete information.

PHARMACY CAREER GUIDANCE CENTER

A Guidance Center has been established within the School of Pharmacy to keep students informed about the latest career opportunities available to those possessing a pharmacy education and to attract high school and junior college students to the profession.

The Center consists of faculty members, School of Pharmacy alumni, and pharmacy practitioners. It provides upon request speakers for career day programs and information to high school counselors on all matters relating to a pharmacy education and career.

Pamphlets containing career information on pharmacy are also available through the Guidance Center. Inquiries should be directed to the Pharmacy Career Guidance Center, School of Pharmacy, Duquesne University, Pittsburgh, Pennsylvania 15219.

RESEARCH FOUNDATION

The Hugh C. Muldoon and Pharmacy Alumni Foundation of Duquesne University, established in 1950 to celebrate the twenty-fifth anniversary of the founding of the School of Pharmacy, is an increasingly valuable aid in helping to achieve the aims of the University and of the School of Pharmacy. The foundation provides funds for improving the instructional and research facilities of the School; it assists in the advancement of pharmacy by supporting the training of undergraduate and graduate students in industrial and research procedures; it helps to extend the knowledge from research being conducted under the auspices of the School. Contributions are solicited from graduates and others interested in the work of the Foundation. They may be addressed in care of the School of Pharmacy.

COURSE DESCRIPTIONS

The courses of instruction are numbered in accordance with a plan uniform throughout the University.

Courses numbered 100 are Freshman courses; 200 Sophomore; 300 Junior; 400 Senior. Courses numbered 10 through 39 reflect required courses in the professional curriculum. Courses numbered 500 are graduate level courses in which qualified undergraduate students may be enrolled with the permission of the Dean of the Graduate School. Credit for these courses cannot be used to satisfy requirements for a second degree.

Course descriptions for the liberal arts and science courses may be found in the section of this catalog under the heading College of Liberal Arts and Sciences and School of Business and Administration.

Department of Pharmaceutical Chemistry and Pharmaceutics

Chairman: Mitchell L. Borke, Ph.D.

Associate Chairman: Alvin M. Galinsky, Ph.D.

1. Pharmaceutical Orientation.

1 cr.

Introduction to pharmacy. Discussion of various phases of pharmacy and their relationship to the profession as a whole. Pharmaceutical organizations are discussed and evaluated. The pharmaceutical literature is discussed and a brief history of pharmacy is presented. Lecture, one hour.

11. Physical Pharmacy.

4 cr.

A course designed to acquaint the student with the theory upon which the principles and processes of pharmacy are based. The theories of emulsification, drug extraction, isotonicity, hydrogen ion concentration, rheology, micromeritics, etc. are discussed and the instruments which are used in their measurements are described and utilized in the laboratory. Prerequisites: Mathematics 115, general physics; organic chemistry (concurrent registration in organic chemistry may be accepted). Lecture, three hours; Laboratory, four hours.

- 12. Physical Pharmacy.** 4 cr.
A continuation of Physical Pharmacy 11. Prerequisite: Physical Pharmacy 11. Lecture, three hours; Laboratory, four hours.
- 14. Pharmaceutical Mathematics.** 3 cr.
A course designed to familiarize the student with the mathematical problems and calculations encountered in pharmaceutical practice. Lecture, two hours; Recitation, one hour.
- 16. Biochemistry.** 4 cr.
Designed to emphasize primarily the manner in which energy is derived from food. Metabolisms of carbohydrates, lipids, and proteins are discussed and interrelated. The function of enzymes, vitamins, and hormones is discussed in relation to their role in metabolism. The relationship of biochemistry to disease states is stressed. Prerequisite: Organic Chemistry. Lecture, three hours; Laboratory, three hours.
- 19. Electronics for Health Sciences.** 4 cr.
A course for science students who have little or no background in electronics but who need a working knowledge of electronic devices and circuitry. Principles of electronics, servomechanisms, operational amplifiers, and digital control problems are covered. Prerequisites: Calculus I, general physics. Class, three hours; Laboratory, four hours.
- 21. Biopharmaceutics and Dosage Forms.** 4 cr.
A study of the pharmaceutical, physico-chemical, and biological factors which affect the absorption, availability, and distribution within the body, of drugs from the various classes of dosage forms. Emphasis is placed on the formulation and evaluation of specific official and unofficial solid, semi-solid, liquid, and gaseous dosage forms, and the development of the skills necessary for their preparation. Prerequisite: Physical Pharmacy 12. Lecture, three hours; Laboratory, four hours.
- 22. Biopharmaceutics and Dosage Forms.** 4 cr.
A continuation of Biopharmaceutics and Dosage Forms 21. Prerequisite: Biopharmaceutics and Dosage Forms 21. Lecture, three hours; Laboratory, four hours.
- 23. Medicinal Chemistry.** 3 cr.
Relationship between chemical structure and the biological action of drug molecules. Emphasis is on underlying principles as well as on specific therapeutic agents. Organization is by pharmacological classification, with chemical properties relating to mechanism of action, stability, biodistribution and metabolism considered for each class. Lecture, three hours. Prerequisites: Physical Pharmacy 11, 12, or its equivalent.
- 24. Medicinal Chemistry.** 3 cr.
A continuation of Medicinal Chemistry 23. Prerequisite: Medicinal Chemistry 23. Lecture, three hours.
- 27. Analytical Chemistry.** 4 cr.
Rigorous training in stoichiometric relationships and in the application of equilibrium principles, with laboratory experience in the principal methods of gravimetric and volumetric analysis. Prerequisites: Physical Pharmacy 11, 12 or Physical Chemistry. Lecture, three hours; Laboratory, seven hours.
- 28. Organic Pharmaceutical Analysis.** 3 cr.
A course devoted to the identification and determination of the relative amounts of active constituents in pharmaceutical and medicinal substances. Prerequisite: Analytical Chemistry 27. Lecture, three hours.

499. Independent Study and Research.**1 or 2 cr.**

Opportunity for students to carry out independent study or research in pharmaceutical chemistry and pharmaceutics under the supervision of a faculty member. Maximum of four credits. Registration by permission of instructor.

Department of Pharmacognosy

Chairman: Norbert A. Pilewski, Ph.D.

26. Natural Products.**4 cr.**

Deals with the important medicinal agents which are derived from natural sources. Emphasis is placed on the medicinally important antibiotics, alkaloids, glycosides, volatile oils, fixed oils, vitamins, carbohydrates, and enzymes; includes a description of the natural source of the drug, its precise chemical nature, its pharmacological effect on the body, and its importance in medicine today. Prerequisite: Organic chemistry. Lecture, three hours; Laboratory, three hours.

35. Medical Microbiology.**4 cr.**

Covers the general characteristics and morphology of bacteria, the important staining techniques, methods of growing bacteria on artificial media, and testing the effects of chemotherapeutic agents on pathogenic bacteria. It includes discussions of the important bacterial, rickettsial, bedsonial, viral, and protozoal diseases along with worm infestations, their causes, symptoms, and treatments. Lecture, three hours; Laboratory, three hours.

36. Public Health.**3 cr.**

A discussion of Public Health measures such as immunization, water purification, sewage disposal, treatment of contaminated individuals and objects, control of rodents and insects, and the relationship of these to the spread of disease. Health statistics, disaster preparedness, and environmental pollution are also discussed. Lecture, three hours.

Department of Pharmacology-Toxicology

Chairman: Gene A. Riley, Ph.D.

2. Drug Abuse.**1 cr.**

A course designed to present the pharmacological and toxicological properties of substances of abuse. The major classes of drugs are described with direct reference to toxic and adverse effects. The myths and misconceptions commonly attributed to some substances of abuse are clarified. The philosophy of the course is to present an objective picture of the "drug abuse era" in this country. The course is intended for all students beginning their collegiate studies. Admission to this course for students who have completed Pharmacology 33 or its equivalent is by approval of the instructor.

- 3. Basic Pharmacology.** 3 cr.
A course dealing with the major classes of therapeutic agents, designed for students with a limited background in biological sciences. Drugs are considered from a "disease state" point of view and include basic mechanisms of action. Important drug interactions as they relate to patient care are included. Not open to Pharmacy Students. Prerequisites: Six credits of biological science, including physiology. Lecture, three hours.
- 4. Social Diseases.** 1 cr.
Causes, course of diseases, prevention, treatment and social effects of venereal diseases. Awareness and common sense should be awakened in students by the course. Lecture, one hour a week. Open to students who have not completed Pharmacy 33.
- 17. Anatomy and Physiology.** 3 cr.
An integrated course of the structure and function of tissues and organs. The various organ systems of vertebrate species are discussed as integrated functional units. Prerequisite: General Biology 112; Lecture, three hours.
- 18. Anatomy and Physiology.** 4 cr.
A continuation of Anatomy and Physiology 17. Prerequisite: Anatomy and Physiology 17 and 20. Lecture, four hours.
- 20. Anatomy and Physiology Laboratory.** 1 cr.
Lecture presentations of gross anatomy and laboratory procedures including the microscopic examination of tissues, hematology and the clinical appraisal of physiological functions. Laboratory-lecture, three hours.
- 33. Pharmacology.** 3 cr.
A basic course in pharmacodynamics and pharmacotherapeutics. Special emphasis is placed on its sites and mechanisms of action of therapeutic agents. Prerequisites: Anatomy and Physiology 17, 18. Lecture, three hours.
- 34. Pharmacology.** 4 cr.
A continuation of Pharmacology 33. Prerequisite: Pharmacology 33. Lecture, four hours.
- 40. Pharmacology.** 3 cr.
A continuation of Pharmacology 34. Lecture, three hours.

Department of Pharmaceutical Administration

Chairman: Anthony J. Amadio, M.B.A.

- 12. Pharmaceutical Law.** 3 cr.
A course designed to acquaint the student with the philosophy of law and its relationship to pharmacy. Federal, state, and local laws and regulations pertinent to the handling and sale of drugs, cosmetics, narcotics, poisons, and alcohol are discussed. A review of antitrust laws, fair-trade regulations, and other court decisions of importance to the pharmacist is included. Elements of Business law and civil responsibilities of the pharmacist are also discussed. Lecture, three hours.

- 37. Pharmacy Administration.** **3 cr.**
A course designed to familiarize the student with the diverse social, political, economic, and legal forces affecting the practice of pharmacy. The course considers the persons, places, and activities involved in providing health care services with special emphasis on the role of the community pharmacist. Lecture, three hours.
- 39. Practical Pharmacy I.** **3 cr.**
Practical Pharmacy Program required of all final year pharmacy students and involving placement in operating pharmacies with a pharmacist preceptor. Off-campus placement may be necessary. Note: calendar change for fifth year students may be required.
- 41. Practical Pharmacy II.** **3 cr.**
An extension of Practical Pharmacy 39 required for all final year students.

Department of Clinical Pharmacy

Chairman: Thomas Mattei, Pharm.D.

- 31. Professional and Clinical Practice.** **4 cr.**
A course designed to prepare the student for professional pharmacy practice. Didactic, laboratory and clinical experience are integrated to develop the student's ability in providing pharmaceutical services to patients and to other members of the health team. Emphasis is placed on the use of modern medicinals in a variety of patient, sociological and disease situations. Advanced teaching techniques utilizing case discussions, the computer and clinical interactions with patients requires the student to pool his background of social, physical and biological sciences in dealing with complications of modern drug therapy. Prerequisite: Biopharmaceutics and Dosage Forms 22. Lecture, three hours; Laboratory, six hours.
- 32. Professional and Clinical Practice.** **4 cr.**
A continuation of Professional and Clinical Practice 31. Prerequisite: Professional and Clinical Practice 31. Lecture, three hours; Laboratory, six hours.

Department of Medical Technology

Director: Jeanne A. Cooper, M.D.

Education Coordinator: Eileen Steele, M.T. (ASCP)

- 61. Clinical Chemistry.** **7 cr.**
A comprehensive study of the chemistry and metabolism of proteins, carbohydrates, lipids, and electrolyte, enzyme, and hormone systems as revealed by the various examinations performed on blood and other body fluids.

- 62. Urinalysis.** **2 cr.**
The study of renal function and its abnormalities as portrayed by alterations in the composition of the urine.
- 63. Hematology.** **5 cr.**
Detailed study of the anatomy and physiology of the blood and various laboratory methods used in establishing inherited or acquired abnormalities of blood or blood-forming organs.
- 64. Blood Banking.** **3 cr.**
Essentials and importance of proper selection of blood for transfusion, pretesting methods, records, and administration of blood. Also included are studies of tests pertaining to isosensitization.
- 65. Bacteriology.** **5 cr.**
The study of clinical bacteriology, including culture methods, biochemical and immunological aspects of identification, and the application of these to the disease state.
- 66. Parasitology.** **5 cr.**
Methods of identification of the various parasites infesting man, with detailed study of their morphology and habitat.
- 67. Immunology.** **2 cr.**
Study of the procedures used in analysis of immune mechanisms of the body, and their application in disease processes.
- 69. Mycology.** **1 cr.**
The study of the pathogenic fungi, the diseases they cause, and the technical methods of identification.
- 70. Virology.** **1 cr.**
The study of the viruses causing disease and the technical methods of identification.
- 71. Radioisotopes.** **2 cr.**
The study of the use of radioisotopes in the diagnosis and treatment of disease.

Department of Radiological Health

Chairman: Mitchell L. Borke, Ph.D.

- 51. Radiological Health Practice.** **4 cr.**
Designed to provide the student with practical experience in at least four broad areas of radiological health: industrial, hospital, reactor, and university. This experience will be acquired through observation and participation in daily practical problems of radiation protection within local organizations representative of the four broad areas of radiological health. Emphasis will be placed on personnel monitoring and dosimetry, radiochemical assaying of biological and environmental materials, field surveying of plant operations involving large quantities of fission products and other radioactive materials, environmental monitoring practices, decontamination procedures, and radiation protection record keeping. Prerequisites: Bionucleonics 539; Radiological Health 541; Co-requisite: Radiological Health 542; Laboratory, 16 hours.

- 431. Introduction to Biostatistics.** 3 cr.
The purpose of this course is to familiarize the beginning student with some statistical techniques and their applications to clinical problems in the life sciences. Prerequisites: Mathematics 115. Lecture, three hours.
- 525. Electronics for Scientific Instrumentation.** 3 cr.
A course for science students who have little or no background in electronics but who need a working knowledge of electronic devices and circuitry. Principles of electronics, servomechanisms, operational amplifiers, digital control problems. Prerequisites: Mathematics 115, Physics 212.
- 539. Bionucleonics.** 3 cr.
A study of the fundamental techniques of manipulation and measurement of radioisotopes. Experiments performed individually by each student include: measurement of radioactivity with G-M counters, flow counters, ionization chambers, proportional counters, crystal and liquid scintillators; study of the characteristics of radiation, gamma spectrometry; some applications of radioisotopes in pharmacy, chemistry, biology, etc. Prerequisites: Chemistry 121, 122, Physics 211, 212.
- 540. Advanced Bionucleonics and Radiopharmaceuticals.** 3 cr.
A course devoted to the practical applications of radioactive isotopes in chemistry, biology, pharmacy, and medicine. The scope of the course includes neutron activation analysis, gamma spectrometry, tracer methods, and radiopharmaceuticals. Prerequisite: Bionucleonics 539.
- 541, 542. Radiological Health I and II.** 4 cr. each
A course designed to review the fundamental physical and biological principles of radiation protection, and the application of these principles to the measurement techniques, radiation hazard evaluation, radiation protection surveillance and administration. Scientific principles most applicable to solving problems of protecting humans from unacceptable levels of radiation exposure both in occupational and public environment are emphasized.

RECOMMENDED PROFESSIONAL ELECTIVES

The following elective courses are taught in the School of Pharmacy and may be chosen by students who have met the prerequisites.

- 29. Emergency Treatment.** 3 cr.
A lecture-demonstration course. The course teaches how to render first-aid cases of emergency, while awaiting the arrival of a physician. Special emphasis is placed on emergencies which the pharmacist is most likely to be confronted with, e.g. epileptic seizures, heart attacks, fainting, diabetic coma, etc. Prerequisites: Anatomy and Physiology 17 and 18. Lecture, three hours; demonstrations included during lecture hours.
- 52. Hospital Pharmacy.** 3 cr.
An introductory course designed to acquaint the student with the history, organization, and development of pharmacy practice in hospitals. The responsibilities of the pharmacy service in the modern hospital are discussed. Field trips to area hospitals complement the lecture material. Prerequisite: Physical Pharmacy 12. Lecture, three hours.
- 54. Sterilization and Parenteral Pharmaceuticals.** 1 cr.
Sepsis and asepsis, sterilization, bacterial filtration, pyrogen and sterility testing. Class size limited to 18 students. Laboratory, 16 hours. Prerequisite: Physical Pharmacy 12.

- 53. Advanced Clinical Pharmacy.** 3 cr.
A course designed to present the pharmacy student with actual patient-drug relationships as observed in the hospital. Lecture, one hour; Recitation, one hour; Laboratory, three-four hours.
- 56. Clinical Chemistry.** 3 cr.
A course adapted to familiarize the student with qualitative and quantitative determinations of biochemical body constituents in order that the information may be utilized in clinical medicine. Prerequisite: Biochemistry 16. Lecture, three hours; Laboratory, four hours.
- 58. Community Practice I.** 3 cr.
The course considers the principles and functions of management as applied to a community pharmacy operation so that the objectives of the pharmacist-manager are attained with maximum efficiency. Prerequisite: Pharmacy Administration 37. Lecture, three hours.
- 59. Community Practice II.** 3 cr.
The course concerns itself with the operational aspects of a community pharmacy with emphasis on the business or commercial matters pertinent to a successful operation. Prerequisite: Pharmacy Administration 37; Lecture, three hours.

Any course taught in the University may be chosen as an elective course by students who have met the prerequisites.

The following courses offered by the Graduate Department of Pharmaceutical Sciences are available to qualified upperclassmen in the School of Pharmacy.

- 501. Manufacturing Pharmacy.**
- 502. Pharmaceutical Formulation and Development.**
- 505. Methods of Pharmaceutical Control.**
- 510. Advanced Biopharmaceutics.**
- 523, 524. Medicinal Chemistry.**
- 525. Electronics for Scientific Instrumentation.**
- 539. Bionucleonics.**
- 540. Advanced Bionucleonics and Radio Pharmaceuticals.**
- 541, 542. Radiological Health.**
- 543. Biostatistics and Epidemiology.**
- 560. Biosynthesis of Natural Products.**
- 561. General Toxicology.**
- 563. Pathology.**
- 567, 568. Clinical Pharmacology.**
- 569. Toxins: Their Chemistry, Biology and Toxicology.**

Descriptions of these courses may be found in the Graduate School Bulletin.

RECOMMENDED ELECTIVES FOR RADIOLOGICAL HEALTH

103. Logic.

111. Introduction to Philosophy.

102. Ethics.

101. Introduction to Political Science.

312. International Law and Organization.

103. General Psychology I.

101. Survey of Sociology.

201, 202. English Literature.

231, 232. Development of the United States.

307, 308. History of Science.

201. Speech and Phonetics.

202. Speaking and Listening.

101. Elements of Economics.

203. Genetics.

Reserve Officer Training Corps

PROGRAMS

The Army Reserve Officer Training Corps (ROTC) program is open to male and female students on a voluntary basis. Two-year and four-year programs are offered; both are taken in conjunction with the required course of study in all the University's undergraduate degree programs. Interested incoming students are encouraged to enroll immediately so that the ROTC program and their academic major are phased properly for graduation. For entry into the two-year program, the student must have two academic years remaining, either at the undergraduate or graduate level, or a combination of the two. The Professor of Military Science invites letters or telephone calls of inquiry. Questions will be answered promptly.

ARMY ROTC SCHOLARSHIPS

Army ROTC offers a number of scholarships for cadets enrolled in the four-year and two-year programs. These scholarships include tuition, fees, and textbooks. For details see ROTC Scholarships in the Financial Aid section, pages 26 and 27.

Department of Military Science

Department Head: Colonel James R. Bambery, USA

FOUR-YEAR PROGRAM

All students in the four-year Military Science program are required to take 12 credits in Military Science and eight non-credit pre-professional laboratories. One three-credit course offered within the University's curriculum approved by the PMS will be taken each academic year and one non-credit Military Science laboratory will be taken each semester.

Basic Course students (first and second year) will select two of these courses:

His. 348. Modern American Military History	3 cr.
Soc. 195. The Military and Society	3 cr.
Pol. Sci. 215. National Strategy.	3 cr.

(Soc. 195 is offered by the Department of Sociology and Pol. Sci. 215, by the Department of Political Science.)

In addition, students will take Military Science pre-professional Laboratories 001, 002, 003 and 004.

Advanced Course students (third and fourth year) are required to take these courses:

- MS-301. Dynamics of Group Presentations.** 3 cr.
- MS-401. Professional Seminar.** 3 cr.
- MS Laboratories 005, 006, 007 and 008.**

(MS 301 must be taken in the Junior Year or prior to attendance at Advanced Summer Camp.)

TWO-YEAR PROGRAM

All students in the two-year program are required to successfully complete the six-week ROTC Basic Summer Camp prior to their last four semesters at the University and to fulfill all the requirements of the foregoing Advanced Course.

SAMPLE PROGRAM

Freshman Year		
<i>Fall Semester</i>		Credits
Courses in Academic Major	12	
Military Subject (fulfills elective requirement)	3	
MS-001 Leadership Development	0	
		<u>15</u>
<i>Spring Semester</i>		
Courses in Academic Major	15	
MS-002 Leadership Development	0	
		<u>15</u>
Sophomore Year		
<i>Fall Semester</i>		
Courses in Academic Major	15	
MS-003 Leadership Development	0	
		<u>15</u>
<i>Spring Semester</i>		
Courses in Academic Major	12	
Military Subject	3	
MS-004 Leadership Development	0	
		<u>15</u>
Junior Year		
<i>Fall Semester</i>		
Courses in Academic Major	15	
MS-005 Leadership Development	0	
		<u>15</u>

Spring Semester

Courses in Academic Major	12
MS-301 Dynamics of Group Presentations	3
MS-006 Leadership Development	0
	15

Summer

Attendance at 6-Week ROTC Advanced Camp

Senior Year

Fall Semester

Courses in Academic Major	15
MS-007 Leadership Development	0
	15

Spring Semester

Courses in Academic Major	12
MS-401 Professional Seminar	3
MS-008 Leadership Development	0
	15

COURSE DESCRIPTIONS

Basic Course

His. 348. Modern American Military History. 3 cr.

The course will systematically study modern U.S. conflicts from 1914 to the present. The course focuses on the political, social and economic conditions leading to each major conflict; evaluates in general terms the conduct of military operations, and assesses the impact of the conflict upon the nation. Special emphasis is placed upon the role of the U.S. as a world leader, modernization of the Armed Forces, military-business relationships, selective service, and public opinion.

Soc. 195. The Military and Society 3 cr.

To relate to the student the military's social processes and organizational setting. To treat the military profession as an object of social inquiry, to enable the student to gain a fuller and more accurate assessment of the military. Furthermore, to attempt to present the military as objectively as possible. In addition, the fundamental changes that the American military has undergone in the 1960's and 1970's will be presented and how these changes relate to the civilian environment. Prerequisite: Soc. 101.

Pol. Sci. 215. National Strategy. 3 cr.

In examining national security strategy, analysis will address such independent variables as qualitative and quantitative power factors, perceptions, physical and subjective bargaining capability, and the external and internal environment. Attention is focused also on the perceived institutional role of the military and its impact on the evolution of strategy with particular emphasis placed on the national strategies of the United States in the post World War II era.

Advanced Course

MS 301. Dynamics of Group Presentations

Designed to give students opportunities to improve their techniques of oral instruction through formalized teaching and practical exercises. Topics for student presentations will relate to the theories of leadership as they apply to the learning process.

MS-401. Professional Seminar

3 cr.

To relate to the student facts concerning Army Career Development, organization and traditions, which he should know prior to Active Duty; specifically, those facts which he will receive little or no orientation during his basic officer course. To give the student information concerning the establishment of a financial plan for himself and his family, whether in the Army or in civilian life. Furthermore, to give the student an orientation on the other services. In addition, the student will have a chance to broaden his knowledge on current military and civilian affairs by researching and presenting certain topics outlined by the course.

PRE-PROFESSIONAL LABORATORIES

Non-Credit

MS-001, 002. Leadership Development.

MS-003, 004. Leadership Development.

MS-005, 006. Leadership Development.

MS-007, 008. Leadership Development.

MILITARY SCIENCE MINOR

The introductory course for the minor is History 348, Modern American Military History (no credit toward the minor). The required, three-credit hour courses are Sociology 195-The Military and Society; Political Science 215-National Strategy; and Defense Management. To complete the minor, *one* elective must be selected from among the following:

College of Liberal Arts and Sciences

History

231, Development of the U.S. to 1877

232, Development of the U.S. since 1877

356, Diplomatic History of the United States

358, Civil War and Reconstruction

Political Science

309, International Relations

315, Politics of Emerging Nations

Psychology

326, Developmental Psychology II -
Adolescence and Maturity

340, Social Psychology

Speech

300, Argumentation and Debate

304, Persuasion

School of Business and Administration

201, Principles of Management

309, Administrative Organization

ROTC FLIGHT TRAINING

Army ROTC Flight Instruction is offered to students in the second year of the Advanced Course. It is an FAA approved flight program consisting of 35 hours of classroom instruction and 36 hours of flight training. Successful completion of the course leads to a private pilot's license. The course is free to students selected for instruction.

AIR FORCE ROTC

The Air Force ROTC program is offered on a cross-enrollment basis at the University of Pittsburgh. Students interested in Air Force ROTC should contact the Department of Aerospace Studies, University of Pittsburgh for detailed information and enrollment procedures.

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Index

Academic			
Advisor	31	Transfers	9
Calendar - 1976-1977; 1977-1978	vii	Veterans	10
Load - Arts and Sciences	47	Applied Music Courses	151
Policies	31	Army ROTC	207
Regulations - Arts and Sciences		Arts and Sciences Courses	
Standing	34	Biological Sciences	48
Year and Summer Sessions	2	Chemistry	52
Accounting Curriculum	118	Classics	54
Accreditation and Affiliation	4	Classics in English	57
Activities and Facilities		Earth Science	91
Fee, Pharmacy	40	Economics	58
Administration		English	62
and Faculty	217	Fine Arts	67
Building	2	French	80
Admission	7	German	81
Application—New First Year Students	8	Greek	55
Other Categories	8	History	69
Office	7	Italian	81
Early	8	Journalism	74
Entrance Requirements	7	Latin	55
Foreign Students	8	Mathematics	77
Policy	7	Modern Languages	79
Post Graduates	9	Philosophy	83
Readmission	9	Physics	87
Rolling	8	Political Science	92
Summer Session	10	Psychology	95
Temporary Transfers	10	Russian	82
Academic Year	10	Sociology	99
Summer	11	Spanish	83
Transfers	9	Speech Communication and	
Veterans	10	Theatre	102
Admission, Special Requirements		Theology	106
Education	129	Assumption Hall	3
Music	142	Athletics	40
Nursing	176	Attendance, Class	31
Pharmacy	190	Auditing Courses	31
Administrative Divisions	213	Auditor's Fee	13
Academic	213	Bachelor-Master's Program	48
Business and Financial	214	Bachelor's Degree Fee	14
Campus Ministry	216	Bachelor's-Professional School	
Student Services	215	Program	48
University Committees	216	Bad Checks	16
University Relations	215	Bank Credit Cards	16
Administrative Officers	212	Baritone Horn Courses	156, 164
Advanced Placement	11	Basic Education Opportunity Grants	21
Advisor, Academic	31	Bassoon Courses	157, 159
Air Force ROTC	211	Behavioral Science, Division of	120
Analytic Methods Curriculum	115	Law Administration	121
Application		Management	122
Fee	13	Marketing	124
for Financial Aid	20	Pre-Legal Program	121
New First-Year Students	8	Biological Sciences	
Early Admission	8	Courses	48
Other Categories	8	Department of	48
Foreign Students	8	Requirements for Major	48
Post-Graduates	9	Requirements for Minor	49
Readmission	10	Board of Directors	212
Summer Session	10	Buildings	2
Temporary Transfers	10		

Bureau of Research and Community Services	112	Class Attendance	31
Business Affairs Building	3	Classics	
Business and Administration School of	111	Courses	55
Bureau of Research and Community Services	112	Department of	54
Bureau of Research	112	Requirements for Major	55
Center for Administration of Legal Systems	112	Requirements for Minor	55
Center for Economic Education	113	Classification of Students	31
Center for International Management	113	Full-time	32
Course Descriptions	115	Part-time	32
Accounting	119	Post-Graduate	32
Analytic Methods	115	Clinical Pharmacy, Department of	201
Economic Science	125	College Hall	3
Finance	116	College Level Examination Program	11
Management	122	College of Liberal Arts and Sciences, See Liberal Arts and Sciences,	
Marketing	124	College of	
Curriculums	115	Committees	
Accounting	118	Athletic	216
Analytic Methods	115	Scholarships and Financial Assistance	216
Economic Science	125	University	216
Finance	116	Competitive Scholarships	20
Law Administration	121	Confidentiality of Student Records	30
Management	122	Continuing Education, Division of	113
Marketing	124	Costs. See Fees and Tuition	
Degree	112	Course	
Division and Programs	114	Examinations	32
Division of Continuing Education	113	Retrogression	33
History	111	Course Descriptions	
Philosophy and Objectives	111	Arts and Sciences	48
Sample Program	114	Business and Administration	115
Scholarships and Loans	23	Education	136
Student Organizations	113	Music	151
		Nursing	180
		Pharmacy	197
		ROTC	209
		Courses	
Calendar, Academic	vii	Auditing	31
Cancellation of Courses	31	Cancellation of	31
Campus Ministry	38, 216	Repeating	33
Canevin Hall	3	Retrogression	33
Career Planning and Placement	38	Credit	
Cashing Checks	16	by Examination	32
Center for Administration of Legal Systems	112	Hour Bank	11
Economic Education	113	Unit of	36
International Management	113	Cross-Registration	29
Certification		Curriculums	
Music	144	Arts and Sciences	46
Subject Area Requirements	134	Bachelor-Master's	47
Teacher	131	Bachelor's/Professional School	47
Certified Public Accountant Requirements	118	Pre-Engineering	47
Change of Schedule	29	Pre-Law	47
Fee	13	Pre-Medical	47
Checks		Second Bachelor's Degree	47
Bad	16	Seminary	46
Cashing	16	Three-Year Bachelor's	47
Chemistry		Business and Administration	114
Courses	53	Accounting	118
Department of	52	Analytic Methods	115
Requirements for Majors	52	Economic Science	125
Requirements for Minors	53	Finance	116
Clarinet Courses	152, 160	Law Administration	121
		Management	122
		Marketing	124

- Pre-Legal 121
 Education 129
 Early Childhood 131
 Elementary 132
 Music 133, 148
 Secondary 133
 Special Education 135
 Music 144
 Music Education 148
 Music Education Therapy 149
 Orchestral Instrument 147
 Organ 145
 Piano 144
 Voice 146
 Nursing 178
 Pharmacy 184
 Medical Technology 187
 Radiological Health 189
 ROTC 207
- Damage Deposit, Resident Hall 13, 15
 Dean's List 35
 Deferred Payment 16
 Degree
 Arts and Sciences 46
 Awarded with Honors 36
 Business and Administration 112
 Education 131
 Music 143
 Nursing 175
 Pharmacy 184, 187, 189
 Requirements 35, 46, 114, 131-136, 144-151, 178, 195
 Degrees and Programs Offered vi
 Departments, College of Liberal Arts and Sciences
 Biological Sciences 48
 Chemistry 52
 Classics 54
 Economics 58
 English 62
 Fine Arts 67
 History 69
 Journalism 74
 Mathematics 77
 Modern Languages 79
 Philosophy 83
 Physics 87
 Political Science 92
 Psychology 95
 Sociology 99
 Speech Communication and Theatre 102
 Theology 106
 Departments, School of Pharmacy
 Clinical Pharmacy 201
 Medical Technology 201
 Pharmaceutical Administration 200
 Pharmaceutical Chemistry and Pharmaceutics 197
 Pharmacognosy 199
 Pharmacology-Toxicology 199
 Radiological Health 202
- Directors, Board of 212
 Divisions, School of Business and Administration
 Behavioral Science 120
 Economic Science 125
 Quantitative Science 115
 Double Bass Courses 153, 160
 Dormitories
 Assumption Hall 3
 Duquesne Towers 3
 St. Ann Hall 3
 St. Martin Hall 3
 Dropping and Adding Courses 29
 Duquesne
 Duke (Newspaper) 43
 Magazine 44
 Towers 3
 Union 3, 41
 Program Board 41
- Early Admission 8
 Early Childhood Education
 Courses 137
 Program 131
 Earth Science Courses 90
 Economic Science, Division of 125
 Curriculum 125
 Economics
 Courses 58
 Department of 58
 Requirements for Major 58
 Requirements for Minor 58
 Education, School of 129
 Class Attendance 131
 Course Descriptions 136
 Early Childhood 137
 Educational Foundations and Psychology 136
 Elementary 138
 Secondary 139
 Special 139
 Curriculum 129
 Degree 131
 General Education 129
 History 129
 Honor Awards 130
 Laboratory Experiences 130
 Professional Education 130
 Programs 131
 Early Childhood 131
 Elementary 132
 Music 133
 Secondary 133
 Special Education 135
 Selection and Admission 129
 Student Organizations 130
 Teacher Certification 131
 Educational Foundations and Psychology 136
 Effective Catalog-Arts and Sciences 48
 Elementary Education
 Courses 138

Program	132	Application - University Aid	20
English		Award Conditions	18
Courses	63	Basic Educational Opportunity	
Department of	62	Grants	21
Honors Program	62	Competitive Scholarships	20
Requirements for Major	62	Current Information	19
Requirements for Minor	62	Financial Need	18
Ensemble Courses		Gift Assistance	19
Entrance Requirements		Guaranty Student Loans	22
General	7	Health Profession Loans	21
Education	129	Health Profession Scholarships	21
Music	142	Meeting Student Need	19
Nursing	176	National Direct Student Loans	20
Pharmacy	190	Need	18
Eurhythmics	167	Nurses Training Act Loans	21
Evening Study	5	Nursing Scholarships	21
Examinations		Other Scholarships and Loans	22
Advanced Placement	11	Pennsylvania State Grants	22
Credit by	32	Principles of	18
Final	32	Program Funding	19
Expenses. <i>see</i> Fees and Tuition		Programs	20
Facilities		ROTC Scholarships	26
Activities	40	Sources of	19
Physical	2	State Grant Assistance	22
Faculty, Administration and		Student Employment	18
Arts and Sciences	217	Supplemental Educational Opportunity	
Business and Administration	226	Grants	21
Education	228	University Scholars Awards	20
Music	230	Financial Aid—Departments and	
Nursing	235	Schools	23
Pharmacy	238	Business and Administration	23
ROTC	242	College of Liberal Arts and Sciences ...	23
Fees and Tuition	13	Education	24
Application Fee	13	Music	24
Auditor's Fee	13	Nursing	25
Bad Checks	16	Pharmacy	25
Bank Credit Cards	16	ROTC Scholarships	26
Change of Schedule Fee	13	Financing Program, Student	16
Credit by Examination Fee	13	Fine Arts	
Damage Deposit, Resident Hall	13, 15	Courses	67
Deferred Payment	16	Requirement for Minor	67
Graduation Fees	14	Flute Courses	153, 160
Laboratory Fees	13	Foreign Students, Admission of	8
Late Registration Fee	13	French Courses	80
Matriculation Deposit	13	Freshmen, Admission of	8
Refund, Room and Board	16	Full-Time Students	32
Remission of Tuition	15	General Education	129
Removal of I Grade	13	German Courses	81
Resident Hall Pre-Payment	13	Grade Reports, Semester	30
Room and Board	15	Grades	
Scholarships, Credit toward Tuition ...	16	Incomplete	32
Special Fees		Withdrawal	33
Music	142	Grading System	32
Nursing	177	Graduate Courses for Undergraduate	
Pharmacy	191, 192	Credit	35
Summer and Special Session	14	Graduation	
Tuition	13	Fees	14
University Fee	11	Honors	36
Withdrawal and Termination		Requirements	35
of Attendance	14	Greek Courses	55
Finance Curriculum	116	Guaranty Student Loans	22
Financial Aid	18		

- Gymnasium 3
- Harp Courses 153, 161
- Health Profession Loans 21
- Scholarships 21
- Health
- Insurance 39
- Services 39
- Helping Services 38
- History
- Courses 70
- Department of 69
- Requirements for Major 69
- Requirements for Minor 69
- The University 1
- Honors, Graduation 36
- Honor Awards
- Education 130
- Music 144
- Nursing 178
- Pharmacy 193
- Honor Societies 43
- Horn Courses 154, 161
- Inter-Fraternity Council 42
- International Student Advisement 39
- Italian Courses 81
- Journalism
- Courses 75
- Department of 74
- Requirements for Major 74
- Requirements for Minor 74
- Laboratory Fees 13
- General 13
- Nursing 177
- Pharmacy 191
- Late Registration Fee 13
- Latin Courses 55
- Law Administration Curriculum 121
- L'Esprit du Duc (Yearbook) 44
- Liberal Arts and Sciences, College of
- Academic
- Regulations 47
- Requirements 48
- Course Descriptions 48
- Biological Sciences 48
- Chemistry 52
- Classics 54
- Economics 58
- English 62
- Fine Arts 67
- History 69
- Journalism 74
- Mathematics 77
- Modern Languages 79
- Philosophy 83
- Physics 87
- Political Science 92
- Psychology 95
- Sociology 39
- Speech Communication and
- Theatre 102
- Theology 106
- Credit by Examination 48
- Curricular Requirements and
- Programs 45
- Effective Catalog 48
- History 45
- Philosophy and Objectives 45
- Programs 47
- Scholarships 23
- Library 4
- Licensing of Pharmacists 195
- Loans and Scholarships. *See*
- Scholarships and Loans
- Management Curriculum 122
- Marketing Curriculum 124
- Mathematics
- Courses 77
- Department of 77
- Requirements for Major 77
- Requirements for Minor 77
- Matriculation Deposit 13
- Medical Technology, Department of 201
- Mellon Hall of Science 3
- Military Science, Department of 207
- Ministry, Campus 38, 216
- Modern Languages
- Courses 80
- Department of 79
- French Courses 80
- German Courses 81
- Italian Courses 81
- Requirements for Major 80
- Requirements for Minor 80
- Russian Courses 82
- Spanish Courses 82
- Music, School of 3, 141
- Admission 142
- Advisement 142
- Course Descriptions 151
- Applied Music 151
- Bassoon 152, 159
- Clarinet 152, 160
- Double Bass 153, 160
- Flute 153, 160
- Guitar 153, 161
- Harp 153, 161
- Horn 154, 161
- Oboe 154, 162
- Organ 155, 162
- Percussion 155, 163
- Piano 156, 163
- Saxophone 156, 163
- Trombone and Baritone Horn 156, 164
- Trumpet 157, 164
- Tuba 157, 164
- Viola 158, 165
- Violin 158, 165
- Violoncello 158, 166
- Voice 166
- Conducting 166
- Ensemble 166
- Eurhythmics 167
- General Education 173
- Music Education 167

- Music History, Literature and Art ... 170
 Music Theory 170
 Music Therapy 171
 Non-Music Majors 172
 Tamburitans Institute of
 Folk Arts 172
 Degrees 143
 Equipment 143
 Fees, Special 142
 History 141
 Honor Awards 144
 Philosophy and Objectives 141
 Private Instruction Fees 143
 Programs
 Music Education 148
 Music Therapy 149
 Orchestral Instrument 147
 Organ 145
 Piano 144
 Voice 146
 Recital Attendance 144
 Scholarships 24
 Student Organizations 143
 Teacher Certification 144
 Theology Requirement 144
 National Direct Student Loans 20
 Nurses Training Act Loans 21
 Nursing, School of 175
 Admission of Registered Nurse
 Students 176
 Admission Requirements 176
 Course Descriptions 180
 Curriculum Standards 180
 Fees, Special 177
 Graduation Requirements 178
 History 175
 Honor Awards 178
 Objectives 176
 Philosophy 175
 Program of Study 178
 Registered Nurses 179
 Scholarships 25
 Second Baccalaureate Degree
 Program 177
 Student Organizations 177
 Suggested Curriculum Plan 179
 Nursing Scholarships 25
 Oboe Courses 154, 162
 Officers, Administrative 212
 Organ Courses 155, 162
 Organizations, *See* Student Organizations
 Pan-Hellenic Council 42
 Part-Time Students 32
 Pass/Fail Electives 33
 Payments and Other Credits 16
 Bad Checks 16
 Bank Credit Cards 16
 Cashing Checks 16
 Deferred Payment 16
 Scholarships 17
 Student Financing Program 16
 Percussion Courses 155, 163
 Pharmaceutical Administration,
 Department of 200
 Pharmaceutical Chemistry and Pharma-
 ceutics, Department of 197
 Pharmacists, State Licensing of 195
 Pharmacognosy, Department of 199
 Pharmacology-Toxicology, Department of 199
 Pharmacy, School of 183
 Activities Fee 192
 Admission 190
 Career Guidance Center 196
 Course Descriptions 197
 Clinical Pharmacy 201
 Medical Technology 201
 Pharmaceutical Administration 200
 Pharmaceutical Chemistry
 and Pharmaceutics 197
 Pharmacognosy 199
 Pharmacology-Toxicology 199
 Professional Electives 203
 Radiological Health 202
 Curriculum Majors 186
 Degrees 184, 187, 189
 Fees, Laboratory 191
 Graduation Requirements 195
 History 183
 Honor Awards 193
 Philosophy and Objectives 183
 Professional Electives 203
 Programs 184
 Pharmacy 184
 Medical Technology 187
 Radiological Health 189
 Research Foundation 197
 Regulations 192
 Scholarships and Loans 25
 State Licensing 195
 Student Organizations 193
 Philosophy and Objectives
 University 1
 Philosophy
 Courses 84
 Department of 83
 Requirements for Major 83
 Requirements for Minor 83
 Physics
 Courses 88
 Department of 87
 Earth Science 88, 90
 Requirements for Major 87
 Requirements for Minors 88
 Physical Facilities 2
 Piano Courses 156, 163
 Placement Center, Career Planning and .. 38
 Policies, Scholastic 31
 Political Science
 Courses 93
 Department of 92
 Requirements for Major 92
 Requirements for Minor 92
 Post-Graduate Students, Admission of ... 9
 Pre-Engineering Program 47
 Pre-Law Program 47

- Pre-Legal Program 121
 Pre-Medical Program 47
 Private Instruction Fees in Music 143
 Professional
 and Departmental Organizations 43
 Education 130
 Fraternities and Sororities
 Laboratory Experiences 130
 Programs
 Arts and Sciences 46
 Bachelor-Master's 47
 Bachelor/Professional School 47
 Business and Administration 114
 Education 131
 Music 144
 Nursing 178
 Pharmacy 184
 Pre-Engineering 47
 Pre-Law 47
 Pre-Medical 47
 ROTC 207, 208
 Second Bachelor's Degree 47
 Seminary 46
 Three-Year Bachelor's 47
 Psychological Center for Training
 and Research 39
 Psychology
 Courses 96
 Department of 95
 Requirements for Major 95
 Requirements for Minor 96
 Publications
 Duquesne Duke (Newspaper) 43
 Duquesne Magazine 44
 L'Espirit du Duc (Yearbook) 44
 Quality Point System 33
 Quantitative Science, Division of 115
 Accounting 118
 Analytic Methods 115
 Finance 116
 Radio and Television 44
 Radiological Health, Department of 202
 Readmission 9
 Recital Attendance 144
 Red Masquers 43
 Refund
 Room and Board 16
 Tuition 15
 Registered Nurse Students,
 Admission of
 Registration 28
 Change of Schedule 29
 Cross 29
 Official 28
 Late 29
 Regulations for Pharmacy Students 192
 Requirements for Graduation 35
 Repeating Courses 33
 Residence
 Council 42
 Life 41
 Resident Hall Pre-Payment Fee 13
 Reserve Officer Training Corps 207
 Air Force 211
 Army ROTC Scholarships 26
 Course Descriptions 209
 Department of Military Science 207
 Four-Year Program 207
 Two-Year Program 208
 Flight Training 211
 Programs 207
 Scholarships 26
 Residences, Student. *See* Dormitories
 Rockwell Hall 3
 Rolling Admission 8
 Room and Board 15
 Costs 15
 Refund 16
 ROTC. *See* Reserve Officers Training Corps
 Russian Courses 82
 St. Ann Hall 3
 St. Martin Hall 3
 Saxophone Courses 156, 163
 Scholarships, Credit toward Tuition 17
 Scholarships and Loans—General
 Application—University Aid 20
 Basic Educational Opportunity
 Grants 21
 Competitive Scholarships 20
 Guaranty Student Loans 22
 Health Profession Loans 21
 Health Profession Scholarships 21
 National Direct Student Loans 20
 Nurses Training Act Loans 21
 Nursing Scholarships 21
 Other Scholarships and Loans 22
 State Grants 22
 Student Employment 18
 Supplemental Educational
 Opportunity Grants 21
 University Scholars Awards 20
 Scholarships and Loans—Departments
 and Schools
 Arts and Sciences 23
 Business and Administration 23
 Education 24
 Music 24
 Nursing 25
 Pharmacy 25
 ROTC 26
 Scholastic Policies 31
 School Year 2
 Schools
 Arts and Sciences 45
 Business and Administration 111
 Education 129
 Music 141
 Nursing 175
 Pharmacy 183
 Second Bachelor's Degree 47
 Secondary Education
 Courses 139
 Program 133
 Semester
 Grade Reports 30

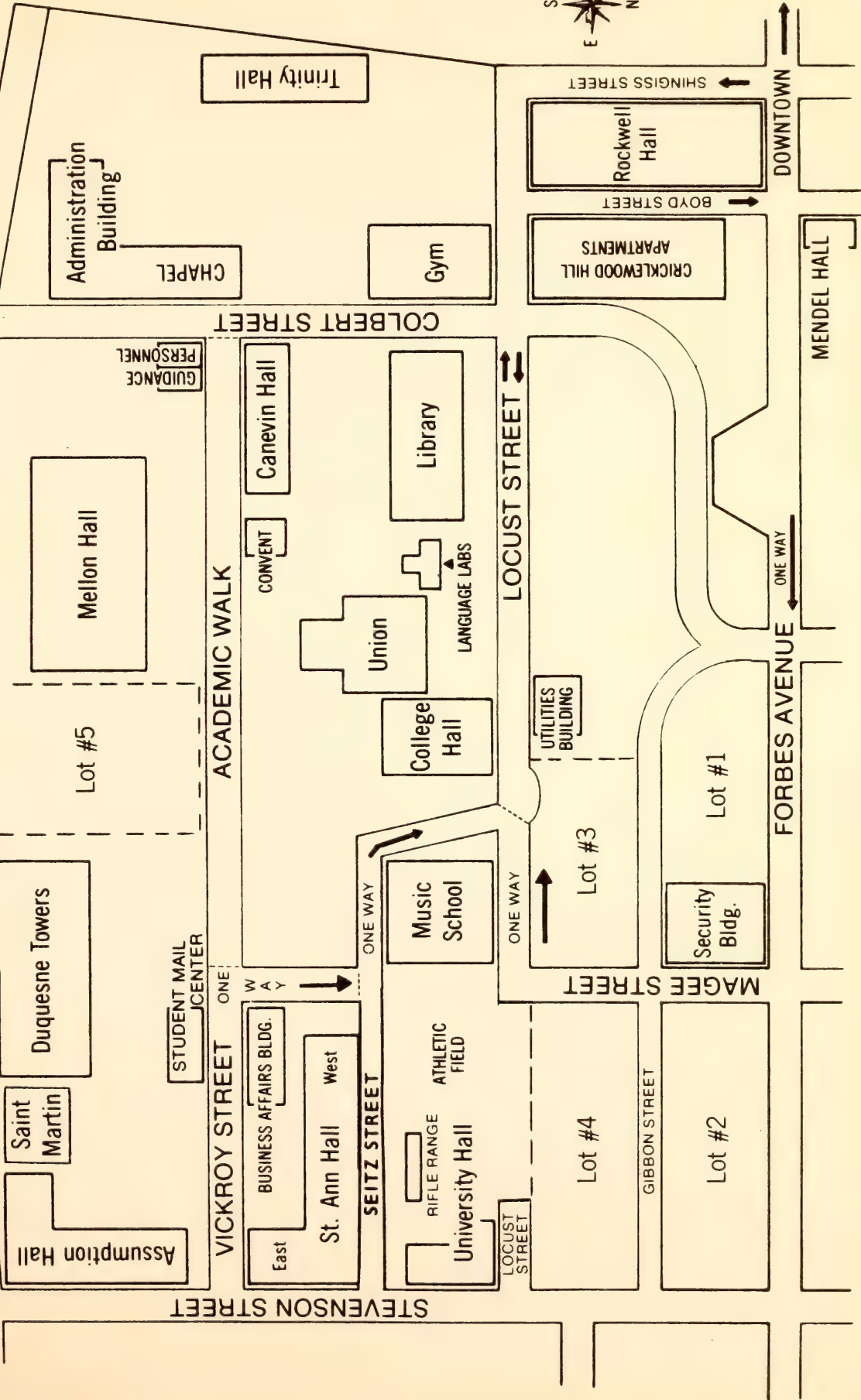
Tuition	13	Theatre	43
Seminary Program	46	WDUQ Radio and Television	44
Service Organizations	43	Students, Classification of	31
Social Organizations	43	Summer and Special Session Tuition and Fee Charges	14
Sociology		Summer Session	6
Courses	99	Duquesne Students	10
Department of	99	Transfer Students	11
Requirements for Major	99	Summer Sessions	6
Requirements for Minor	99	Academic Year and	2
Spanish Courses	82	Supplemental Educational Opportunity Grants	21
Speech Communication and Theatre		Systems Center	39
Areas of Concentration	102	Tamburitzans	43
Courses	103	Teacher Certification	
Department of	102	Education	131
Requirements for Major	103	Music	144
Requirements for Minor	103	Subject Area Requirements	134
Special Education		Television, Radio and	44
Courses	139	Temporary Transfer Students, Admission of Academic Year	10
Program	135	Summer Session	11
Sports. <i>See</i> Athletics		Testing Bureau	40
State		Theatre	43
Licensing of Pharmacists	195	Theology	
Grant Assistance	22	Courses	107
Student		Department of	106
Government	42	Requirement	35, 46, 115, 129, 144
Handbook	37	Requirements for Major	106
Housing. <i>See</i> Dormitories		Requirements for Minor	106
Organizations	42	Three-Year Bachelor's Program	47
Business and Administration	113	Transcripts	30
Education	130	Transfer Within the University	36
Music	143	Transfer Students, Admission of	9
Nursing	177	Temporary	10
Pharmacy	193	Temporary—Summer	11
Records, Confidentiality of	30	Trinity Hall	4
Standing	34	Trombone Courses	156, 164
Student Life	38	Trumpet Courses	157, 164
Activities and Facilities	40	Tuba Courses	157, 164
Athletics	40	Tuition. <i>See</i> Fees and Tuition	
Duquesne Union	41	Tuition Remission Schedule	
Program Board	41	Within the Semester	15
Residence Life	41	Within the Summer Session	15
Helping Services	38	Union Program Board	41
Campus Ministry	38	Unit of Credit	36
Career Planning and Placement	38	University	1
Health Insurance	39	Accreditation and Affiliation	4
Health Services	39	Administrative Divisions	213
International Student Advisement	39	Academic	213
Psychological Center for Training and Research	39	Business and Financial	214
Systems Center	39	Student Services	215
Testing Bureau	40	Administrative Officers	212
Student Government	42	Board of Directors	212
Association	42	Buildings	2
Inter-Fraternity Council	42	Campus Ministry	38
Pan-Hellenic Council	42	Committees	216
Residence Council	42	Hall	4
Student Organizations	42	History	1
Honor Societies	43	Library	4
Professional and Departmental Organizations	43		
Publications	43		
Service Organizations	43		
Social Organizations	43		
Tamburitzans	43		

Philosophy and Objectives	1	Voice Courses	166
Relations	216	WDUQ Radio and Television	44
Scholars Awards	20	Withdrawal	
Setting	2	and Termination of Attendance	14
Veterans, Admission of	10	from a Course	36
Viola Courses	158, 165	from the University	37
Violin Courses	158, 165	Grades	33
Violoncello Courses	158, 166	Women's Sports. <i>See</i> Athletics	

DUQUESNE UNIVERSITY CAMPUS

Tamburizan Cultural Center
1801 Boulevard of Allies

BLUFF STREET



STEVENSON STREET

COLBERT STREET

ACADEMIC WALK

VICKROY STREET

STUDENT MAIL CENTER

BUSINESS AFFAIRS BLDG.

St. Ann Hall East

St. Ann Hall West

SEITZ STREET

RIFLE RANGE

University Hall

ATHLETIC FIELD

Music School

College Hall

Union

LANGUAGE LABS

Library

Canevin Hall

CONVENT

Mellon Hall

Lot #5

Duquesne Towers

Assumption Hall

Saint Martin

Administration Building

CHAPEL

Gym

Trinity Hall

LOCUST STREET

MAGAFF STREET

Lot #4

Lot #2

Lot #1

Security Bldg.

UTILITIES BUILDING

Lot #3

Rockwell Hall

CRICKLEWOOD HILL APARTMENTS

BOYD STREET

SHINGISS STREET

FORBES AVENUE

ONE WAY

MENDEL HALL

DOWNTOWN

ONE WAY

FIFTH AVENUE

ONE WAY

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Pittsburgh, Pennsylvania 15219

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Duquesne University

Pittsburgh, Pennsylvania



Undergraduate Catalog

1978-1979

Directory

ADDRESS—University, 600 Forbes Avenue, Pittsburgh, Pa. 15219

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for other offices, call 434-6000

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School of Business and Administration, Rockwell Hall, Room 403

Telephone: (412) 434-6277/6278

School of Education, Canevin Hall, Room 214

Telephone: (412) 434-6118/6119

School of Music, Room 315

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School of Nursing, College Hall, Room 629

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Telephone: (412) 434-6001/6002/6003

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STUDENT HEALTH INSURANCE—Administration Building, Second Floor

Telephone: (414) 434-6058

TESTING BUREAU—Administration Building, Third Floor

Telephone: (412) 434-6204/6208

Duquesne University
Pittsburgh, Pennsylvania

UNDERGRADUATE
CATALOG
1978-1979

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Duquesne University admits students of any sex, race, color, national and ethnic origin to all rights, privileges, programs, and activities generally accorded or made available to students at the school. It does not discriminate on the basis of sex, race, color, national or ethnic origin in administration of its educational policies, admissions policies, scholarship and loan programs, and athletic and other University-administered programs.

The provisions of this catalog are to be considered directive in character. The University reserves the right to make any changes that seem necessary or desirable, including fees, tuition and room and board.

Contents

Calendar	iii
I. General Information	3
II. Programs and Courses	9
Liberal Arts and Sciences	11
Business and Administration	67
Education	86
Music	99
Nursing	129
Pharmacy	139
R.O.T.C.	162
III. Student Services, Programs and Organizations	167
IV. Admission, Tuition and Fees, Financial Aid	177
V. Registration, Scholastic Policies	201
VI. Directories	213
Index	248



ACADEMIC CALENDAR

1977-1978 and 1978-1979

1977-1978

FALL SEMESTER—1977

July 29	Friday	Preregistration with Pay-by-Mail Option Closes
August 25-27	Thursday through Saturday	Final Registration
August 27	Saturday	Latest Date to Cancel 1977 Fall Semester Registration Without Penalty
August 29	Monday	Fall Semester Begins
September 5	Monday	Holiday: Labor Day
September 6	Tuesday	Latest Date to Register and for Change of Schedule (No remission of charges for reduced class schedule after this date)
September 6	Tuesday	Latest Date for December 1977 Graduates to Apply for Graduation
September 10	Saturday	Latest Date for 80% Tuition Remission for Total Withdrawal from the University
September 17	Saturday	Latest Date for 40% Tuition Remission for Total Withdrawal from the University
September 24	Saturday	Latest Date for 20% Tuition Remission for Total Withdrawal from the University
October 19	Wednesday	Latest Date to Report Mid-term Grades
October 19	Wednesday	Undergraduate I Grade Conversion Date for 1977 Spring Semester and Summer Session Courses (I grades not removed on or before this date convert to F's)
October 24	Monday	Latest Date for December 1977 Graduates to Submit Thesis Outline
October 24	Monday	Due Date for Instructors to Submit Undergraduate I Grade Removal Grades
October 26	Wednesday	Latest Date for Undergraduates Other Than First Semester Freshmen to Withdraw with W Grade
November 1	Tuesday	Holiday: All Saints Day
November 7-18	Monday through Friday	Pre-registration for 1978 Spring Semester
November 23-27	Wednesday through Sunday	Holidays: Thanksgiving
November 28	Monday	Classes Resume
December 5	Monday	Latest Date for December 1977 Graduates to Submit Thesis and Schedule Comprehensives

1977

December 8	Thursday	Holiday: Immaculate Conception
December 9	Friday	Pre-registration with Pay-by-Mail Option for 1978 Spring Semester Closes (Registration suspended after this date until Tuesday, January 10, 1978)
December 13	Tuesday	Latest Date for First Semester Freshmen to Withdraw with W Grade
December 14-20	Wednesday through Tuesday	Final Examinations
December 20	Tuesday	Semester Ends
December 20	Tuesday	Graduation for December, 1977 Graduates

SPRING SEMESTER—1978

December 9	Friday	Pre-registration with Pay-by-Mail Option Closes
January 10, 11	Tuesday and Wednesday	Final Registration
January 11	Wednesday	Latest Date to Cancel 1978 Spring Semester Registration without Penalty
January 12	Thursday	Spring Semester Begins
January 21	Saturday	Latest Date to Register and for Change of Schedule (No remission of charges for reduced class schedules after this date)
January 21	Saturday	Latest Date for May, 1978 Graduates to Apply for Graduation
January 25	Wednesday	Latest Date for 80% Tuition Remission for Total Withdrawal from the University
January 30	Monday	Latest Date for May 1978 Graduates to Submit Thesis Outline
February 1	Wednesday	Latest Date for 40% Tuition Remission for Total Withdrawal from the University
February 8	Wednesday	Latest Date for 20% Tuition Remission for Total Withdrawal from the University
March 3	Friday	Latest Date to Report Mid-term Grades
March 3	Friday	Undergraduate I Grade Conversion Date for 1977 Fall Semester Courses (I grades not removed on or before this date convert to F's)
March 8	Wednesday	Due Date for Instructors to Submit 1977 Fall Semester Undergraduate I Grade Removal Grades
March 10	Friday	Latest Date for Undergraduates other than First Semester Freshmen to Withdraw with W Grade

1978

March 13-22	Monday through Wednesday	Pre-registration for 1978 Fall Semester
March 23-28	Thursday through Tuesday	Easter Vacation
March 29	Wednesday	Classes Resume
March 31	Friday	Latest Date for May 1978 Graduates to Submit Thesis and Schedule Comprehensives
April 17	Monday	Latest Date for May 1978 Graduates to Pay Accounts
April 26	Wednesday	Latest Date for First Semester Freshmen to Withdraw with W Grade
April 27-29	Thursday through Saturday;	
May 1-3	Monday through Wednesday	Final Examinations
May 3	Wednesday	Spring Semester Ends
May 5	Friday	Honors Day Exercises
May 5	Friday	Commencement Baccalaureate Mass
May 6	Saturday	Commencement

1978-1979

FALL SEMESTER—1978

July 21	Friday	Pre-registration with Pay-by-Mail Option Closes
August 24-26	Thursday through Saturday	Final Registration
August 26	Saturday	Latest Date to Cancel 1978 Fall Semester Registration Without Penalty
August 28	Monday	Fall Semester Begins
September 4	Monday	Holiday: Labor Day
September 5	Tuesday	Latest Date to Register and for Change of Schedule (No remission of charges for reduced class schedule after this date)
September 5	Tuesday	Latest Date for December 1978 Graduates to Apply for Graduation
September 9	Saturday	Latest Date for 80% Tuition Remission for Total Withdrawal from the University
September 16	Saturday	Latest Date for 40% Tuition Remission for Total Withdrawal from the University

1978

September 23	Saturday	Latest Date for 20% Tuition Remission for Total Withdrawal from the University
October 19	Thursday	Undergraduate I Grade Conversion Date for 1978 Spring Semester and Summer Session Courses (I grades not removed on or before this date convert to F's)
October 20	Friday	Latest Date to Report Mid-term Grades
October 23	Monday	Latest Date for December 1978 Graduates to Submit Thesis Outline
October 24	Tuesday	Due Date for Instructors to Submit Undergraduate I Grade Removal Grades
October 27	Friday	Latest Date for Undergraduates Other Than Freshmen to Withdraw with W Grade
October 31	Tuesday	Break Day (No classes)
November 1	Wednesday	Holiday: All Saints Day
November 13-18	Monday through Saturday; and	
November 27-30	Monday through Thursday	Pre-registration for 1979 Spring Semester
November 19-26	Sunday through Sunday	Holidays: Thanksgiving
November 27	Monday	Classes Resume
December 4	Monday	Latest Date for December 1978 Graduates to Submit Thesis and Schedule Comprehensives
December 7	Thursday	Break Day (No classes)
December 8	Friday	Holiday: Immaculate Conception
December 15	Friday	Latest Date for First Semester Freshmen to Withdraw with W Grade
December 16-22	Saturday Through Friday	Final Examinations
December 22	Friday	Fall Semester Ends
December 22	Friday	Graduation for December 1978 Graduates

SPRING SEMESTER—1979

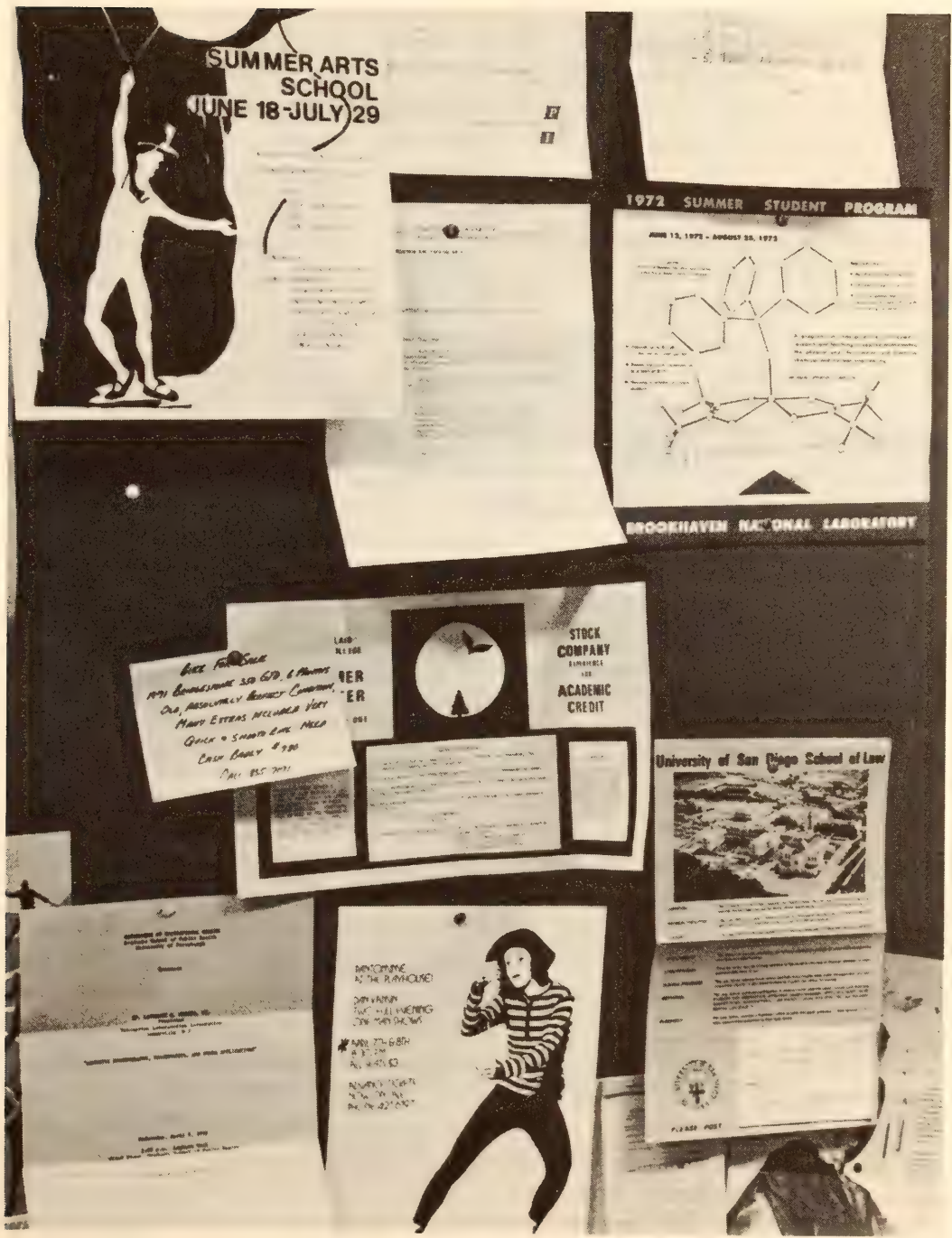
December 7	Thursday	Pre-registration with Pay-by-Mail Option Closes
January 9, 10	Tuesday, Wednesday	Final Registration
January 10	Wednesday	Latest Date to Cancel 1979 Spring Semester Registration Without Penalty

1979

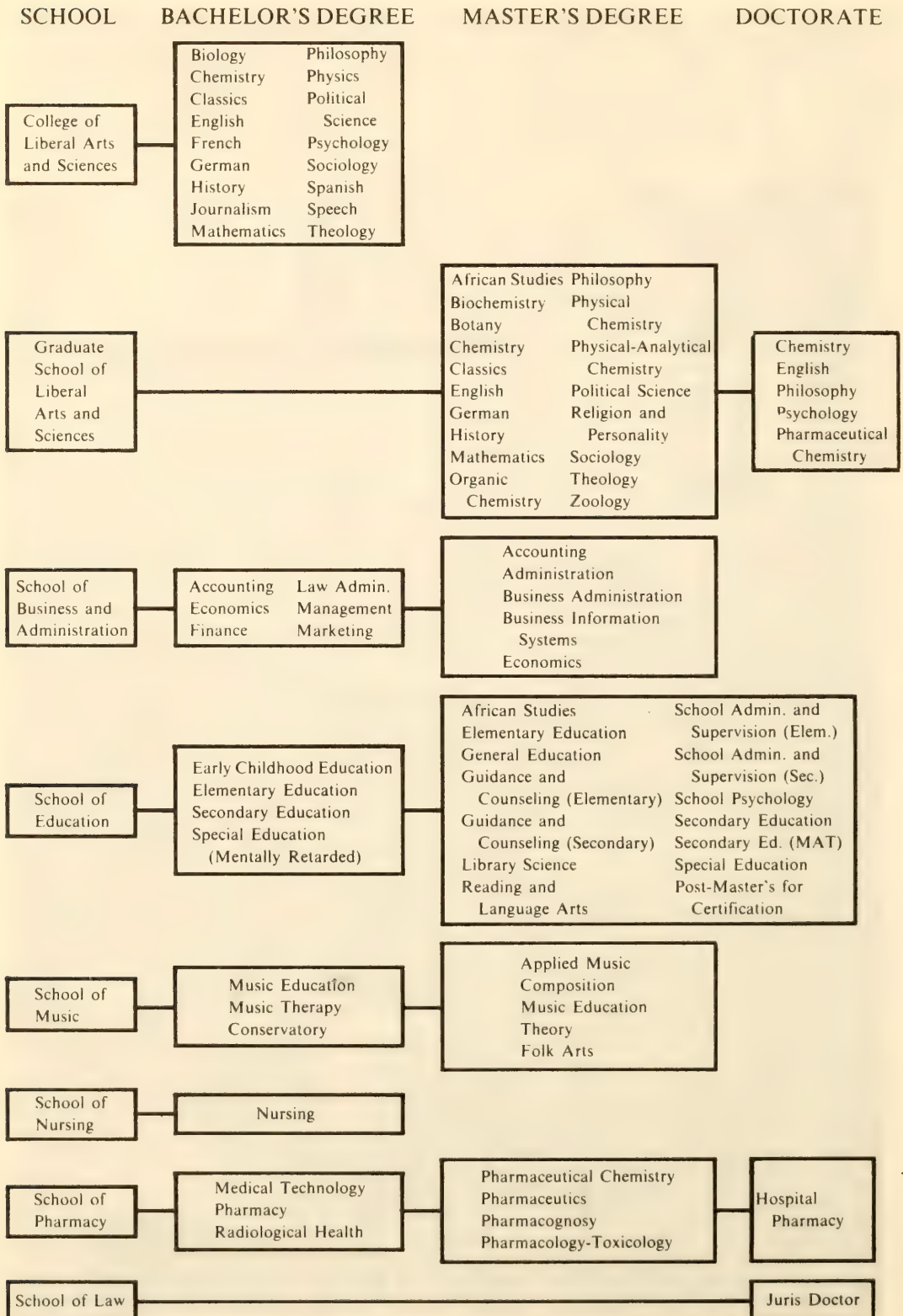
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March 8	Thursday	Due Date for Instructors to Submit I Grade Removal Grades for 1978 Fall Semester
March 9	Friday	Latest Date to Report Mid-term Grades
March 13, 14	Tuesday, Wednesday	Break Days (No classes)
March 16	Friday	Latest Date for Undergraduates other Than First Semester Freshmen to Withdraw with W Grade
April 6-11	Friday through Wednesday; and	
April 17-20	Tuesday through Friday	Pre-registration for 1979 Fall Semester
April 11	Wednesday	Latest Date for May 1979 Graduates to Submit Thesis and Schedule Comprehensives
April 12-16	Thursday through Monday	Easter Vacation
April 17	Tuesday	Classes Resume
April 17	Tuesday	Latest Date for May 1979 Graduates to Pay Accounts
April 26-30	Thursday through Monday; and	
May 1, 2	Tuesday, Wednesday	Final Examinations
May 2	Wednesday	Spring Semester Ends
May 4	Friday	Honors Day Exercises
May 4	Friday	Commencement Baccalaureate Mass
May 5	Saturday	Commencement



Part I: General Information



All Degrees and Programs Offered in the University



General Information

HISTORY

Duquesne University opened its doors as Pittsburgh Catholic College of the Holy Ghost in 1878 with an enrollment of 40 students and a faculty of seven. By 1911 a university charter had been obtained and it was then decided to adopt the name Duquesne University. Dictated by enrollment growth and modern educational demands, planned physical expansion of the University began in 1950. The campus size has more than tripled from its early 12.5 acre area to its present 38.4 acres. With room to grow, Duquesne undertook a program of new construction, rehabilitation, and renovation which has transformed it into an educational facility ranking with the finest in the East.

Today it is an urban university with an enrollment of more than 8000 students in its eight schools. From the original school, which is now the present College of Liberal Arts and Sciences, have evolved the Graduate School (1911) and the School of Law (1911), Business and Administration (1913), Pharmacy (1925), Music (1926), Education (1929), and Nursing (1937). The University offers degree programs in 87 areas—34 at the baccalaureate level; 45 at the master's; and eight at the doctorate.

Duquesne has increased in size and stature over the years, and it is proud of its growth and latest physical facilities. It is aware, however, of the necessity of keeping these material assets in the proper perspective, for they are never more important than the spiritual, academic, and cultural education of the students who become part of the Duquesne family.

PHILOSOPHY AND OBJECTIVES

Duquesne University is a Catholic institution, but it is open to students of all religions and creeds. It is a community composed of people having common aims and is committed to the ideal of graduating men and women whose minds seek intellectual freedom and the pursuit of truth. The University seeks to develop students who have the ability to judge independently, to live with honest doubt, to interrelate facts and disciplines, to balance memory, reason, and imagination. In essence, the Duquesne student is to be a person whose mind is strong and healthy, a person fully aware of humanity and sensitively responsive to humanity's strengths and weaknesses.

The educational objectives of the University are to develop a sound philosophy of life through an understanding of spiritual, physical, intellectual, moral, social, and aesthetic aims and values. It strives to develop scholarship and continued professional growth, a well-balanced personality, and an attitude of constant evaluation of oneself as an individual and as a member of the community.

Duquesne offers a wide variety of programs, courses, and curricula from which individuals may select freely in accordance with their desires and capabilities. In emphasizing the relationship of education to the social, cultural, and economic aspects of life, it seeks to produce graduates who, upon entering their chosen careers, will be effectively prepared to discharge their obligations to God, to their community, and to themselves as intellectual and moral beings.

THE SETTING

Duquesne's hilltop campus is a short five-minute walk from the business, shopping, and entertainment districts of downtown Pittsburgh. This new, dynamic "Renaissance City" is still one of the largest steel-producing cities of the world—but today it is so much more. Pittsburgh is a center for the fine arts, as well as the home of major-league baseball, football, hockey, and tennis teams.

Students from Duquesne and the eight other colleges and universities in the area attend performances of the world renowned Pittsburgh Symphony Orchestra, the Pittsburgh Opera, and the Pittsburgh Ballet Company in elegant Heinz Hall. In the summer the American Wind Symphony offers concerts on Pittsburgh's riversides. Other seasonal events enjoyed by everyone are the International Folk Festival and the Three Rivers Arts Festival. The theatregoer has a choice of entertainment which includes legitimate, commercial and summer theatre.

Pittsburgh also has year-round sporting events. The Pittsburgh Pirates and the Steelers provide major-league baseball and football excitement in the new Three Rivers Stadium. Duquesne's nationally known basketball team, the "Dukes," plays in the Civic Arena—famous for its immense moveable dome.

In the area of participatory sports, golf, riding, fishing, and skiing are all available within a half-hour of the city.

ACADEMIC YEAR AND SUMMER SESSIONS

The regular year is divided into a Fall and a Spring Semester of 15 weeks each. In addition selected courses are offered in summer sessions that vary in length from three to eight weeks.

PHYSICAL FACILITIES

Administration Building, "Old Main," houses the Executive Offices of the University, the Office of Admissions, Testing Bureau, Business Offices, Cashier's Office, Career Planning and Placement Center, Chaplain's Office, Counseling and Learning Center, and Financial Aid. Adjoining this building is the University Chapel where Mass is offered daily.

Assumption Hall, a four-story structure, is a women's residence.

Canevin Hall, the oldest lecture hall on campus, was built in 1922; it was completely renovated and air-conditioned in 1968, and houses the School of Education, Curriculum Library, Institute of African Affairs, and Institute of Man.

College Hall, a six-story classroom and office facility building, is the seat of the College of Liberal Arts and Sciences, the Graduate School, and 12 of their departments and faculties, and the School of Nursing. Special instructional facilities include journalism, speech psychology, numerical analysis, multi-media, and practice skills laboratories.

Music School, built in 1966, has 73 pianos including 56 Steinways, 5 organs, and over 300 orchestral and band instruments available for student use. The school offers training and degrees in conservatory and public school music.

Duquesne Towers, the University's 17-story, double-tower residence houses 1200 men and women. A regulation swimming pool, located on the second floor, is open to all Duquesne students. The building also has an L-shaped dining room for 2,500 resident students, laundromats, and snack-bars. Each room has a telephone, and all rooms are air-conditioned.

Duquesne Union is the center of campus activities. It includes offices for student organizations and interest groups, as well as the offices of the Dean of Students and Director of Athletics. Facilities include three dining areas, a ballroom and student lounge, and the Bookstore. The Recreation Center on the first floor features eight bowling lanes, pocket billiards, table tennis, a music listening room, and an arts and crafts room.

Gymnasium is open for general use of all Duquesne students. It is primarily a practice gym, which is used for both baseball and basketball practice, as well as intramural basketball and volleyball. All varsity basketball games are held at the Civic Arena. (Women's Gymnasium, *see University Hall*)

Richard King Mellon Hall of Science houses the Departments of Biological Sciences, Chemistry, and Physics of both the Graduate and Undergraduate Divisions of the University, as well as the School of Pharmacy. Designed by one of the world's greatest architects, Mies van der Rohe, the building won the "Laboratory of the Year" award for 1969. Instructional facilities include two large lecture halls each with a seating capacity of 248 persons.

Rockwell Hall is the home of the School of Business and Administration and the School of Law, as well as Office Services, Systems Center, and Registrar. The Business Simulation Laboratory of the School of Business and Administration contains 12 conference rooms which are equipped with television cameras and microphones that make possible observation and recording of the activity in the individual conference rooms. The Law School's extensive library is open 24 hours a day.

St. Ann Hall, is a women's residence with a capacity of 324 students. It is air-conditioned, has its own laundry, as well as a number of lounges, television rooms, and a recreation room.

St. Martin Hall, a 14-story residence, provides modern housing for 560 men. Laundry facilities and a reading lounge are found on each floor. A central recreation area is on the second floor.

Trinity Hall serves as the residence for the Holy Ghost Fathers.

University Hall is currently headquarters for the Army ROTC Department,

the campus Radio Station, WDUQ, and the University's Public Safety Department. It also houses the Women's Recreation and Athletics Office, gymnasium, and slimnastics room.

University Library houses a collection of 367,000 bound volumes, subscribes to more than 3,500 periodicals, and contains an increasingly large collection of materials in microprint and other nonbook forms. Special resources include an extensive African Collection of more than 8,300 volumes; 190 periodical titles; and numerous tapes, records, and microfilm. Also notable is the Rabbi Herman Hailperin Collection of 3,000 books and manuscripts reflecting the history of Christian and Jewish intellectual relations, with specific reference to the Bible, during the Middle Ages.

ACCREDITATION AND AFFILIATION

University

Accreditation

Middle States Association of Colleges and Secondary Schools
State Board of Education of the Pennsylvania Department of Education

Membership

American Association of Collegiate Registrars and Admissions Officers
American Association of Urban Universities
American Council on Education
Association of American Colleges
Association of College Admissions Counselors
Association of Governing Boards of Universities and Colleges
Catholic Educational Association of Pennsylvania
National Association for Independent Colleges and Universities
National Association of Student Personnel Administrators
National Catholic Educational Association
National Commission on Accrediting
Pittsburgh Council on Higher Education

College of Liberal Arts and Sciences

Accreditation

American Conference of Academic Deans
American Society of Schools of Journalism

School of Business and Administration

Accreditation

American Assembly of Collegiate Schools of Business

Membership

Association for University Business and Economic Research
Middle Atlantic Association of Colleges of Business Administration

School of Education

Accreditation

National Council for Accreditation of Teacher Education
 Pennsylvania Department of Education

Membership

American Association of Colleges of Teacher Education
 Council on Exceptional Children
 National Association of Elementary School Principals
 National Association of Secondary School Principals
 National Education Association
 Pennsylvania Association for Teacher Education
 Pennsylvania Association of Colleges for Teacher Education
 Pennsylvania Association for Retarded Citizens

School of Music

Accreditation

National Association of Schools of Music
 National Association of Music Therapists

Membership

Association of American Choruses
 Friends of the Music Library
 National Catholic Music Educators Association

School of Nursing

Accreditation

National League for Nursing
 Pennsylvania State Board of Nurse Examiners

Membership

American Association of Colleges of Nursing
 National League for Nursing (Council of Baccalaureate and Higher Degree Programs)

School of Pharmacy

Accreditation

American Council on Pharmaceutical Education
 Pennsylvania State Board of Pharmacy

Membership

American Association of Colleges of Pharmacy

EVENING STUDY

The School of Business and Administration and the College of Liberal Arts and Sciences offer evening classes for full-time and part-time students each semester and during the Summer Session. These are for persons whose employment does not permit them to attend as regular day students.

Through careful planning and consultation with academic advisors the bachelor's degree program may be completed by evening study in some major areas offered by these two schools. Other undergraduate schools also schedule occasional evening courses but it is not possible to complete their degree requirements through evening attendance alone.

Prospective evening undergraduate students should consult with the office of the Dean of the school in which they are interested for information about the opportunity for evening study on a continuing basis.

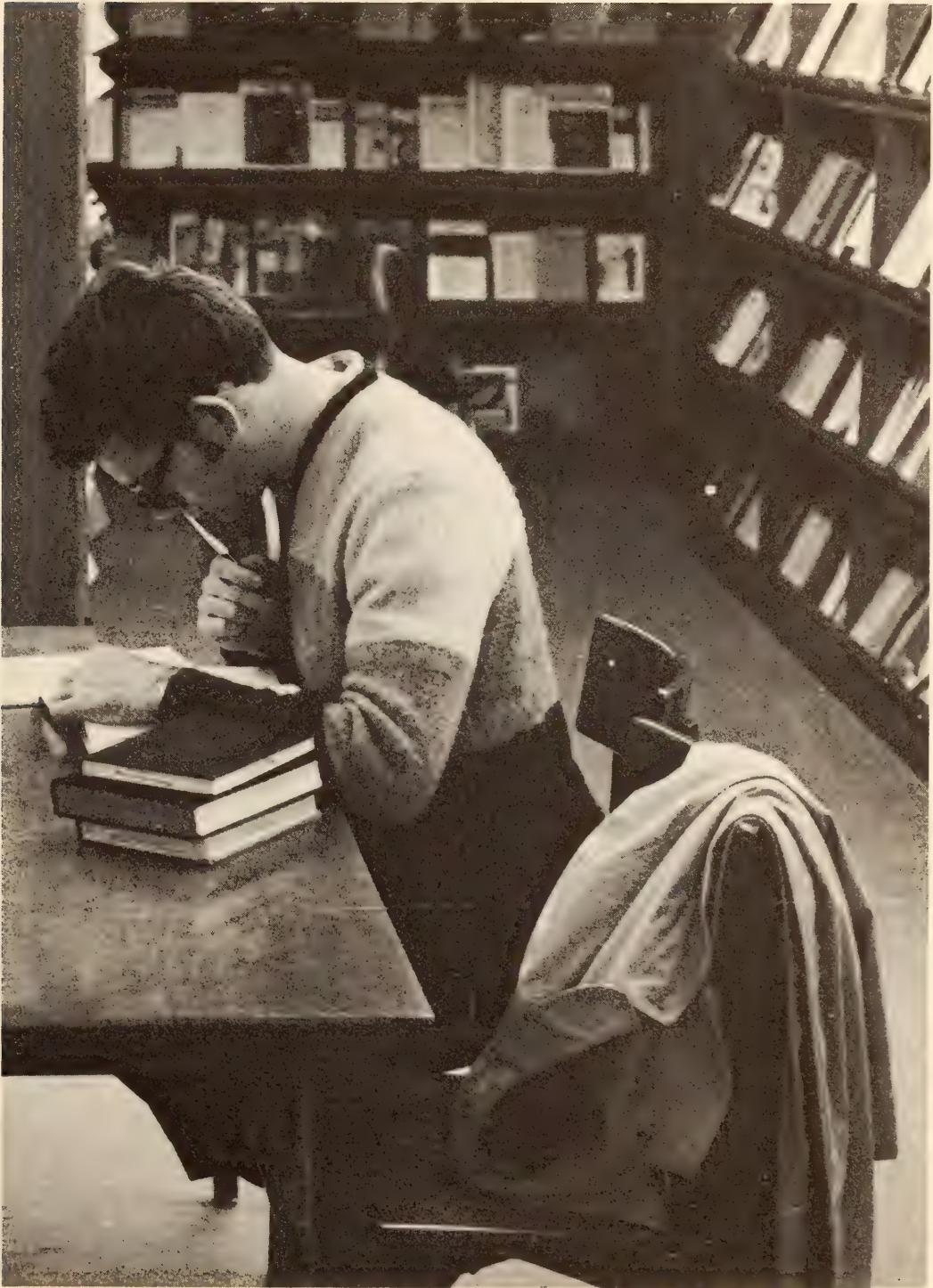
SUMMER SESSIONS

Many undergraduate and graduate courses are offered each summer in most areas. They are open to qualified Duquesne students and to those from other colleges and universities.

The sessions, of varying length, begin in May and run through mid-August. Short term offerings of one and two week duration, usually at the graduate level, are scheduled before and after the regular session.

Part II:

Programs and Courses





College of Liberal Arts and Sciences

HISTORY

In 1878 the Fathers of the Congregation of the Holy Ghost and the Immaculate Heart of Mary established a College of Arts and Letters which was incorporated in 1882 as Pittsburgh Catholic College of the Holy Ghost with authority to grant degrees in the arts and sciences. In 1911 the College and University Council of the Commonwealth of Pennsylvania extended the charter to university status and approved the amendment in favor of the corporate title, Duquesne University.

PHILOSOPHY AND OBJECTIVES

Duquesne University believes that education is concerned with the human person as a whole—mind, body and soul. It believes that each individual has the obligation to self, society, and God to develop potential to the fullest. In this commitment, the College of Liberal Arts and Sciences sets its objectives and forms its curricula.

The objectives of the College are:

1. To provide a solid foundation for lifelong learning.
2. To develop an awareness of the methodologies and epistemologies of the major areas of knowledge so that evaluations and judgments may be valid.
3. To assist in both the growth of self-knowledge and the development of a philosophy of life.
4. To assist the individual to understand his relation to God, to society, and to nature.
5. To perfect that skill in the use of standard English necessary to clear, coherent expression of one's thoughts, hopes, and ideals.
6. To cultivate a background for the learned professions and for scholarly pursuits.

CURRICULAR REQUIREMENTS

English Composition	Proficiency at the 102 level
Modern or Classical Language . . .	Proficiency at the 202 or 212 level
Natural Sciences (Biology, Chemistry, Earth Sciences, Physics, Mathematics)	Nine Credits. One two-semester sequential course must be completed
Social Sciences (Political Science, Psychology, Sociology)	Nine credits. At least two disciplines must be represented.

History, Literature	Nine credits. Both disciplines must be represented.
Philosophy, Theology	Nine credits. Both disciplines must be represented.
Communications (Journalism, Linguistics, Speech)	Three credits
Completion of Major Program . .	As determined by department (Minimum of 24 credits)
Completion of Minor Program . .	As determined by department offering the minor (Minimum of 12 credits above the introductory courses)

Students who major or minor in a basic area automatically satisfy the area requirements for that discipline. Courses taken in an interdisciplinary minor do not satisfy area requirements.

A student's major and minor programs may not be chosen from the same department. (Modern Language majors may minor in another language.)

ACADEMIC REQUIREMENTS

Completion of 120 credits

A minimum cumulative over-all quality point average of 2.0

A minimum cumulative quality point average in the major of 2.0

Removal of I and F grades in required courses

Completion of sequential courses in proper sequence

Completion of the residence requirement. The last 30 credits must be taken at the University.

Submission of application for the degree. No student is considered a degree candidate until he files an application for the degree on a form provided by the Registrar.

PROGRAMS

PRE-ENGINEERING

The pre-engineering course is a two-year program designed to prepare a student for entrance into a school of engineering. Program consists of: Calculus 115, 116, 215, 12 credits; General Analytic Physics 211, 212, 8 credits; Ordinary Differential Equations 216, 4 credits; General Chemistry 121, 122, 9 credits; English Composition 101, 102, 6 credits; balance of credits in electives.

PRE-LAW

Students who intend to prepare for a career in law may select any subject area for the undergraduate major. They will be expected to meet degree requirements in the major department, as well as admission requirements of the law school of their choice.

PRE-MEDICAL

Students who intend to prepare for a career in medicine, dentistry, veterinary medicine, or related fields may major in the subject area of their choice and should select a major as soon as possible. They must meet degree requirements of the major department, as well as admissions requirements of the professional school of their choice. A faculty committee on Pre-Medical Education assists the medically-oriented student.

BACHELOR-MASTER'S

A student who has completed all requirements and a total of 90 credits with a 3.5 average may apply for the bachelor/master's program. After successful completion of the master's program, the student will receive the bachelor's degree.

BACHELOR'S/PROFESSIONAL SCHOOL

A student who has completed 90 credits with a 3.50 overall average and satisfied all undergraduate curricular requirements may apply for the bachelor's degree after the successful completion of the first year of professional work in an accredited medical or law school.

SECOND BACHELOR'S DEGREE

A student who has received a bachelor's degree from another school may become eligible for a second bachelor's degree by earning an additional 30 semester hours in residence in the College of Liberal Arts and Sciences and by meeting all departmental and College requirements if not already satisfied. The additional 30 credits must be completed at the University and may not be taken through cross-registration.

THREE-YEAR BACHELOR'S

For information contact the Office of Admissions or the Dean of the College.

CLEP AND ADVANCED PLACEMENT

See page 183.

ACADEMIC REGULATIONS**ACADEMIC LOAD**

Students may normally carry five courses in one semester. A schedule of more than five courses or 17 credits must be approved by the Dean. In the summer sessions, students normally carry one credit a week; i.e., six credits in the six-week session. A 12-credit schedule in a regular semester is considered full-time study.

EFFECTIVE CATALOG

Degree requirements are those stipulated in the catalog of the year in which a student matriculates. The student is responsible for knowing the requirements for the degree. Requirements may be changed without notice or obligation.

CREDIT-BY-EXAMINATION

Credit-by-examination is available to students who by previous experience or exposure have acquired mastery of the knowledge in a particular course. Arrangements are made through the department chairman. Students must be currently registered when they apply for and take examinations for credit. The examination grade must be approved by the appropriate department chairman and dean.

COURSE DESCRIPTIONS

DEPARTMENT OF BIOLOGICAL SCIENCES

Chairman: HOWARD G. EHRLICH, Ph.D.

Biology is the scientific exploration of life in its many forms and details. To study biology is to pursue an intellectual challenge which provides insight into one's self and enables one to acquire knowledge vital to responsible citizens in societies beset by many serious problems having biological implications.

The undergraduate program is both basic and flexible, aiding students to prepare for professional careers in teaching, medicine, dentistry, veterinary medicine, and advanced study in graduate school. In addition, graduates are qualified as laboratory technicians, and are able to pursue positions in pure and applied research in hospitals, universities, private industry, and civil service. Diverse opportunities are available in pharmaceutical laboratories, medical research laboratories, atomic energy research laboratories, chemical laboratories, food technology and processing, fisheries, oceanography, conservation, health services, space biology, agricultural technology, food and drug administration, environmental services, and others.

REQUIREMENTS FOR THE MAJOR

A minimum of 31 semester hours is needed. Majors are required to take General Biology 111, 112 and to select other courses so that a balance is achieved with experience in the biology of inheritance, structure, and function at the molecular, cellular, and organismal levels. The specific program selected is individually formulated for the student through consultation with an advisor.

Students should consider extradepartmental electives in chemistry and mathematics. Courses 107, 108, 201, 209, 210, and 220 will not be counted toward a major in Biology.

Extradepartmental Requirements: Calculus 115; General Chemistry 121, 122; Organic Chemistry 205, 206 or 221, 222; General (or Analytical) Physics 201, 202 or 211, 212.

REQUIREMENTS FOR THE MINOR

The department offers two minor programs:

1. *Professional Minor* which consists of 111, 112 and a minimum of 12 credits selected from the department's major courses, numbered 200 or above. Individual course prerequisites must be met.
2. *Academic Minor* which consists of 107, 108 or 111, 112 and a minimum of 12 credits selected from the department's courses numbered 200-395. Courses which are open to either non-majors or to majors may be selected. Individual course prerequisites must be met.

If a student takes 107, 108—Principles of Biology and 111, 112—General Biology, the credits for the 107, 108 will not apply to the total number required for the degree.

107, 108. PRINCIPLES OF BIOLOGY.

3 cr. each

Study of the living world of which man is an integral part. It includes considerations of organization, activity, growth, reproduction, inheritance, environmental influences and other interrelationships. This course is designed to provide the non-scientist with the biological information and principles necessary to assume an enlightened role in our increasingly complex society. Does not carry credit toward a Biology Major; 107 is prerequisite to 108. Lecture.

111, 112. GENERAL BIOLOGY.

4 cr. each

Introduction to the scientific study of life at the molecular, cellular and organismal level. It involves consideration of relevant structure, function, development, reproduction, inheritance, evolution and ecology. This course provides the basic information and concept necessary to understand living systems, their activity and interrelationships. 111 is prerequisite to 112. Lecture and laboratory.

201. THE BIOLOGY OF MICROBES.

4 cr.

Examination of microbes as to what they are, how they grow, how they may be controlled, what their relationships to other living things are, why and how some of them cause disease. This course does not carry credit toward a biology major. Lecture and laboratory.

312. ANIMAL PHYSIOLOGY.

4 cr.

An introduction to the fundamental mechanisms of body function in animals. Prerequisites: 111, 112. Lecture and laboratory.

318. PHYSIOLOGY OF REPRODUCTION.

4 cr.

The course includes the anatomy, histology, physiology, biochemistry and endocrinology of vertebrate reproduction. The main emphasis is on the physiology of puberty, estrous and menstrual cycle, conception, pregnancy and parturition. The physiological basis of fertility and infertility also are included. Prerequisites: 111, 112, and 232 or 244. Lecture and laboratory.

324. REGULATORY PHYSIOLOGY.

4 cr.

A treatment of physiological and environmental regulations with emphasis on neuroendocrine integration and adaptation. Prerequisites: 111, 112, and 312 or 444. Lecture and laboratory.

330. INVERTEBRATE BIOLOGY.

4 cr.

The morphology, systematics, life histories and ecology of invertebrate animals, with emphasis on diversity of forms. Prerequisites: 111, 112 or equivalent. Lecture and laboratory.

336. ANIMAL PARASITOLOGY.

4 cr.

The principles of parasitism, and general biology of animal parasites from protozoans through anthropods. Prerequisites: 111, 112 and 330. Lecture and laboratory.

342. NATURAL HISTORY OF INFECTIOUS DISEASES.

3 cr.

The natural history of infectious diseases is considered in this case from the aspect of host-parasite relationships. The process of infection, the outcome of the relationship and

epidemiologic patterns of diseases will be studied. These concepts are explored by understanding the biology of the parasite and the mechanisms of resistance and immunity of the host. Diseases associated with bacteria, viruses, fungi, protozoans and helminths are covered. Prerequisites: 111, 112. Lecture.

348. EVOLUTION 3 cr.

The history, development, concepts, and evidences of evolution with emphasis on modern studies in evolutionary biology, including an introduction to population genetics. Prerequisites: 111, 112 and 226 or 438. Lecture.

395. SPECIAL TOPICS. 1-3 cr.

Treatment of topics of current or special interest in biology. Lecture, laboratory or combinations.

398, 399. UNDERGRADUATE

RESEARCH. 2 cr. each

Opportunity for selected students to work on research problems under the direction of a faculty member. 398 is not prerequisite to 399. Maximum of four credits. Registration by permission of instructor.

209, 210. ANATOMY AND

PHYSIOLOGY. 4 cr. each

Studies designed to provide students with a background in the areas of human body structure and the mechanisms underlying normal body functions. Laboratory includes examination of the micro and gross anatomy of the body, physiological experiments, and exposure to certain basic clinically important measurements and techniques. Prerequisites: some previous exposure to introductory biology and chemistry is desirable; 209 is prerequisite to 210. This course does not carry credit toward a Biology Major. Lecture and laboratory.

220. SEX AND SEXUALITY. 3 cr.

Consideration of sex and reproduction as universal biological functions with special emphasis on physiological and psychological basis of human sexuality. The course also aims to examine sexual functioning, sexual behavior and sex therapy. Does not carry credit toward a Biology Major. Lecture.

226. GENETICS. 4 cr.

A study of the mechanisms of inheritance and their resulting effects on individuals and populations, including their implications in the life of man. Principles and details, methods and applications are illustrated with specific examples drawn from a wide range of species, from microorganisms to man. Prerequisites: 107, 108, or 111, 112. Lecture and laboratory.

232. VERTEBRATE

MACROSTRUCTURE. 4 cr.

A comparative study of the gross structure of vertebrates and the relationship of that structure to function and evolution. Prerequisites: 111, 112. Lecture and laboratory.

238. VERTEBRATE

MICROSTRUCTURE. 4 cr.

A study of tissue and organ structure and the relationship of that structure to function. Prerequisites: 111, 112 and 232 or permission of the instructor. Lecture and laboratory.

244. ANIMAL DEVELOPMENT. 4 cr.

A comparative study of the morphological and physiological aspects of animal development emphasizing current experimental approaches. Prerequisites: 111, 112. Lecture and laboratory.

250. PLANT DEVELOPMENT. 4 cr.

Examines the unique features of representative types of plants, as revealed by interrelationships of form, function and morphogenesis. Prerequisites: 111, 112. Lecture and laboratory.

306. PLANT PHYSIOLOGY. 4 cr.

Varied studies of the growth requirements and regulatory mechanisms of important plant types, with emphasis upon environmental control. Prerequisites: 111, 112 and 250. Lecture and laboratory.

411. ECOLOGY. 3 cr.

A critical examination of the principles and procedures underlying ecological thought, stressing the ecosystem concept and its implications for human activity. Prerequisites: 111, 112. Not open to students with previous similar course. Lecture.

412. ECOLOGY LABORATORY. 1 cr.
Laboratory, including possible field work, illustrates selected subject matter of 411 Ecology. Prerequisites 111, 112 and 411. May be taken concurrently with 411. Laboratory.

432. MICROBIOLOGY. 4 cr.
The classification, structure, function, and metabolism of microorganisms. Prerequisites: Biology 111, 112 and Organic Chemistry. Not open to students with previous similar course. Lecture and laboratory.

438. CELL AND MOLECULAR BIOLOGY. 4 cr.
Structure, function, and biosynthesis of biological macromolecules are discussed. Emphasis is on: DNA replication and function; RNA replication and interactions; protein structure and synthesis; macromolecule regulation including operon theory; viruses as macromolecules.

Special attention is given to the cellular site of action and organelles involved for both eucaryotic and procaryotic systems. Instruments and technical approaches for studying molecular biology are stressed in lecture and some of these are applied in laboratory. Prerequisites: 432 or 444. Not open to students with previous similar course. Lecture and laboratory.

444. CELL PHYSIOLOGY. 4 cr.
A study of cells with regard to: means of obtaining energy including respiration, fermentation, and protosynthesis; work done by the cell including biosynthesis, active transport, and cell movement; cell growth and differentiation; relationships of cell structure to these processes. Prerequisites: 111, 112 and Organic Chemistry. Not open to students with previous similar course. Lecture and laboratory.

DESCRIPTIONS OF THE FOLLOWING COURSES ARE PROVIDED IN THE GRADUATE SCHOOL OF LIBERAL ARTS AND SCIENCES CATALOG.

503. CELL AND FINE STRUCTURAL BIOLOGY.	3 cr.	520. EXPERIMENTAL EMBRYOLOGY.	3 cr.
505. MOLECULAR GENETICS.	3 cr.	523. INVERTEBRATE PHYSIOLOGY.	3 cr.
507. LABORATORY TECHNIQUES.	3 cr.	525. COMPARATIVE MICROBIOLOGY.	3 cr.
511. COMPARATIVE VERTEBRATE PHYSIOLOGY.	3 cr.	528. MICROBIAL PHYSIOLOGY.	3 cr.
512. MAMMALIAN PHYSIOLOGY.	3 cr.	531. BIOLOGY OF FUNGI.	3 cr.
513. GENERAL ENDOCRINOLOGY.	3 cr.	580. URBAN ECOLOGY.	3 cr.

DEPARTMENT OF CHEMISTRY

Chairman: ANDREW J. GLAID, III, Ph.D.

The Chemistry program is designed to provide the student with a fundamental background in chemistry and an understanding of the relationship of chemistry to the other sciences and disciplines. Elective courses and the opportunity to do undergraduate research allow the chemistry major to develop interests in a specialized area of chemistry, such as analytical, inorganic, organic, physical chemistry, and biochemistry.

Because of the fundamental nature of chemistry as a science, numerous opportunities for advanced study, as well as immediate employment, are open to the chemistry major. A large percentage of students elect to continue their study in graduate programs in chemistry and related fields. Chemists and biochemists provide a core of personnel in pure and applied research, technical sales, technical libraries, and management positions in the chemical and related industries, the space industry, the health professions, education and the environmental sciences. The major in biochemistry centers around the core of basic chemistry courses while also providing advanced courses in biochemistry and electives in biology.

REQUIREMENTS FOR THE CHEMISTRY AND BIOCHEMISTRY MAJORS

Thirty-two semester hours are required. All students must take 121, 122, 221, 222, 321, 323, and 421; Mathematics 115, 116; Physics 201, 202 or 211, 212; Biology 111, 112; proficiency in German, Russian or French at the 202 or 212 level is required.

If a student takes 111, 112, and 121, 122, the credits for the 111, 112 will not apply to the total required for the degree. Courses 101, 102; 205, 206 will not be counted toward a major.

Chemistry Major: All students must take 322, 324, 422 and Mathematics 215.

Biochemistry Major: All students must take 401, 524. In addition, two biology electives should be selected from Biology 444, 432, 438. Students planning to enter a graduate chemistry department should take 322, 324.

To meet the American Chemical Society's requirements for Professional Certification, the Chemistry Major must elect two additional courses from the following: 401, 523, 524, 537, 538, 545, 546, 571, 572; Mathematics 216 or 308; Biology 438; Pharmacy Sciences 525, 539; one of these must be a laboratory course. This laboratory requirement can also be fulfilled with 490. The Biochemistry Major must take 322, 324, and 422 for certification.

REQUIREMENTS FOR THE MINORS

A minor in Chemistry consists of 12 credit hours beyond 121, 122. A minor in Biochemistry consists of 12 credits, beyond 121, 122. Normally 205, 206 or 221, 222, along with 401, will constitute the Biochemistry minor.

101, 102. CHEMISTRY AND SOCIETY.

3 cr. each

The impact of chemistry and society reaches every phase of life. The course attempts to provide a link between chemistry and the changes in our technological society. In the first semester, the basic concepts of chemistry are developed for the non-science student and applied to current topics such as air and water pollution, energy, pesticides, etc. The second

semester deals with the biochemistry of living systems. Chemical principles are used to explain the normal life processes of photosynthesis, respiration, etc. as well as abnormal conditions such as drug action, poisons, etc. on metabolic processes. Students with a good high school background do not require the first semester as a prerequisite; others should see the instructor before registering for the second semester. Lecture, three hours.

111, 112. PRINCIPLES OF CHEMISTRY.**4 cr. each.**

The course is divided into three segments, physical, organic, and biochemistry. In the section devoted to physical chemistry the laws of chemical behavior are developed with particular reference to the simple molecules of inanimate nature. The organic section deals primarily with the structural features of organic compounds, the chemistry of functional groups and the practical applications of organic compounds in the synthesis of polymers, of carbohydrates, lipids, proteins, nucleic acids, enzymes, vitamins, etc. Biochemistry is treated in terms of the digestion and metabolism of nutrients, the function of enzymes in the metabolic process and the abnormal metabolic conditions that prevail in disease. Lecture, three hours; Recitation, one hour; Laboratory, two hours.

121, 122. GENERAL CHEMISTRY.

The fundamental principles and concepts of chemistry are presented from the standpoint of atomic and molecular structure with illustrative examples from descriptive chemistry. The basic concepts of thermodynamics, chemical kinetics and equilibrium are introduced. The laboratory portion of the first semester illustrates physical and chemical properties in a quantitative manner, and the laboratory portion of the second semester illustrates the principles of ionic equilibria including qualitative inorganic analysis.

121. Lecture, three hours; Recitation, one hour; Laboratory, six hours. **4 cr.**

122. Lecture, three hours; Recitation, one hour; Laboratory, six hours. **5 cr.**

205, 206; 221, 222.**ORGANIC CHEMISTRY.****4 cr. each**

The theoretical background is developed from the standpoint of the electronic structure of molecules and the accompanying energy considerations. The preparation and the chemical and physical (including spectral) properties of representative organic compounds are discussed in detail. Prerequisites: 121, 122. For 205, 206, Lecture, three hours; Recitation, one hour; Laboratory, four hours; and for 221, 222,

Lecture, three hours; Recitation, one hour; Laboratory, six hours.

321, 322. PHYSICAL CHEMISTRY.**3 cr. each**

A study of the structure and properties of the various states of matter; thermodynamics, thermochemistry, kinetics and an introduction to chemical physics. Prerequisites: Physics 202 or 212, Chemistry 122, Mathematics 116. Lecture, four hours.

323, 324. PHYSICAL CHEMISTRY**LABORATORY.****1 cr. each**

Laboratory portion of Chemistry 321, 322, four hours.

401. INTRODUCTORY**BIOCHEMISTRY.****4 cr.**

An introduction to biochemistry at the cellular level. The structure and chemistry of cellular components (proteins, nucleic acids, etc.), of cellular reagents (enzymes, coenzymes, respiratory pigments, etc.) and metabolic reactions of carbohydrates, lipids and amino acids are discussed. Prerequisite: 206 or 222. Lecture, three hours; Laboratory, four hours.

421. ANALYTICAL CHEMISTRY.**4 cr.**

Theoretical and practical training in modern methods in chemical analysis with emphasis on instrumental methods. Prerequisite: 322. Lecture, three hours; Laboratory, eight hours.

422. INORGANIC CHEMISTRY.**4 cr.**

A survey of the basic principles required for understanding inorganic chemistry including atomic and molecular structure, crystal structure, non-aqueous solvents and coordination compounds. Prerequisite: 322. Lecture, three hours; Laboratory, four hours.

490. UNDERGRADUATE**RESEARCH.****Maximum 2 cr.**

Selected students work on a research problem under the direction of a staff member.

524. MOLECULAR BASIS OF**BIOCHEMISTRY.****3 cr.**

A discussion of the chemistry of amino acids and proteins from the viewpoint of structure, physical chemistry and analysis. An introduction to enzyme chemistry is also included in the course. Prerequisite: 401.

DEPARTMENT OF CLASSICS

Chairman: MARTIN D. SNYDER, Ph.D.

For the student who seeks something more than the mass-produced, plastic culture of contemporary life, the Department of Classics offers courses, both in the original languages and in translation, designed for the enrichment of the individual as a human person. These courses cover a vast period of Western cultural history extending from Homer to the Renaissance. The course material is, moreover, not studied in isolation but in conjunction with the best of contemporary thought and creative expression.

REQUIREMENTS FOR THE MAJOR

A candidate for the Bachelor of Arts degree will be expected to take at least 24 credits in Latin and Greek with a minimum of 18 credits in one language and a minimum of six credits in the other; 211, 212—Survey of Sanskrit Literature may be substituted for the minimum of six credits. Credits applied to the major must be at the 200 level or above. Latin Prose Composition will be required for the major at the discretion of the chairman. Six credits of ancient history (325, 326, 337, 338) are required in addition for any major.

Ancient art and ancient philosophy courses are recommended.

REQUIREMENTS FOR THE MINOR

The department offers a minor in *Latin* (a minimum of 12 credits above the 100 level); a minor in *Greek* (a minimum of 12 credits above the 100 level); and a minor in *Classical Civilization* with concentrations in Greek Civilization, Roman Civilization, Ancient History, and Ancient Art and Literature (12 credits above the 100 level) with the approval of the department and advisors.

101, 102. BASIC LATIN.

4 cr. each

Study of the fundamentals of Latin grammar and syntax combined with occasional exercises in translation from Roman authors.

103, 104. BASIC GREEK.

4 cr. each

Study of the fundamentals of Greek grammar and syntax combined with frequent exercises on translation from Greek authors.

105, 106. BASIC SANSKRIT.

3 cr. each

A study of the fundamentals of Sanskrit grammar and syntax combined with exercises in translation. Some previous foreign language experience is desirable.

201, 202. INTRODUCTION TO LATIN READINGS.

3 cr. each

Survey of major Latin authors.

203, 204. INTRODUCTION TO GREEK READINGS.

3 cr. each

Survey of major Greek authors.

205, 206. BIBLICAL AND PATRISTIC LATIN.

3 cr. each

Selections from Biblical and Christian Latin literature.

207, 208. BIBLICAL AND PATRISTIC GREEK.

3 cr. each

Selections from Biblical and Christian Greek literature.

211, 212. SURVEY OF SANSKRIT LITERATURE.

3 cr. each

Selected readings from major Sanskrit texts including the *Mahabharata*, *Hitopadeṣa*, *Kathasaritsagara*, *Manavadharmaśāstra*, and *Rigveda*.

The following will be taught as Latin or Greek courses or, for those students who are qualified, as combination Latin and Greek courses.

Each course will cover an individual author or group of authors or a *genre*. Each course may be repeated as long as a different author or work is read.

401, 402. PRE-FIFTH

CENTURY. 3 cr. each

The *Iliad*, the *Odyssey*, the *Homeric Hymns* and other epic literature, Hesiod, Pindar, Greek lyric poetry and the pre-Socratics.

403, 404. FIFTH CENTURY. 3 cr. each

Herodotus, Thucydides, Aeschylus, Sophocles, Euripides and Aristophanes.

405, 406. FOURTH CENTURY. 3 cr. each

Greek orators, Plato, Aristotle, Xenophon, Menander and Theophrastus.

407, 408. ALEXANDRIAN PERIOD. 3 cr. each

Apollonius Rhodius, Theocritus, Callimachus and the lesser Alexandrian authors.

409, 410. ROMAN REPUBLIC. 3 cr. each

Remains of early Latin, Plautus, Terence, Polybius, Cicero, Lucretius, Catullus, Caesar, and Sallust.

411, 412. AUGUSTAN AGE. 3 cr. each

Livy, Vergil, Horace, Ovid, Propertius, Tibullus, Manilius, Dionysius of Halicarnassus, *Res Gestae*.

413, 414. EARLY IMPERIAL LITERATURE. 3 cr. each

Seneca, Lucan, Petronius, Martial, Plutarch, the Silver epic, Josephus, *Demetrius on Style*.

415, 416. LATER IMPERIAL LITERATURE. 3 cr. each

Tacitus, Juvenal, Pliny the Younger, Suetonius, Apuleius, Lucian, Dio Cassius, Marcus Aurelius.

417, 418. POST CLASSICAL LITERATURE. 3 cr. each

Selections from post classical, medieval, renaissance and neo-Latin authors.

419. STUDIES IN GENRE. 3 cr.

Selected *genre* of Greek and/or Latin literature.

420. SENIOR SEMINAR. 3 cr.

421, 422. INDEPENDENT READINGS AND RESEARCH. Var. cr.

CLASSICS COURSES IN ENGLISH: (NO GREEK OR LATIN REQUIRED)

121. GENERAL ETYMOLOGY. 3 cr.

A study of Greek and Latin words to facilitate the comprehension of modern English as it is written by our acknowledged modern masters.

122. ETYMOLOGY OF SCIENTIFIC TERMS. 3 cr.

Introduction to Greek and Latin elements of scientific terminology.

123. CLASSICAL MYTHOLOGY. 3 cr.

A presentation of the major myths of Greece and Rome with special attention to contemporary interpretations of myth and the influence of myth on art and literature.

320. SEMINAR. 1-3 cr.

Topics variable.

325. GREEK HISTORY. 3 cr.

An examination of the development of Greek history and culture from earliest times up to the death of Alexander of Macedon.

326. HELLENISTIC HISTORY. 3 cr.

A survey of Mediterranean history from the death of Alexander until the accession of Octavian and the establishment of the Roman principate.

328. THE CLASSICAL TRADITION IN AMERICA 3 cr.

A study of the influences of Graeco-Roman civilization on American cultural life, with special emphasis on its influence on American literature.

330. ANCIENT THEATRE. 3 cr.

An examination of the origins and development

of ancient tragedy and comedy. Readings from the works of Aeschylus, Sophocles, Euripides, Aristophanes, Menander, Seneca, Plautus, and Terence.

331. ANCIENT EPIC. 3 cr.

A study of ancient epic literature with particular attention to the techniques of oral and literary composition. Readings from the works of Homer, Apollonius of Rhodes, Vergil, and Lucan.

332. ANCIENT NOVEL AND ROMANCE. 3 cr.

A survey of Greek and Roman prose fiction with special emphasis on the nature and development of narrative technique. Readings from Homer (*Odyssey*), Herodotus, the Greek Romances, Lucian, Petronius, and Apuleius.

337. ROMAN IMPERIAL HISTORY. 3 cr.

A study of the consolidation and dissolution of the Roman Imperial structure up to the death of Justinian in 565 A.D.

338. ANCIENT INDIAN HISTORY 3 cr.

An investigation of ancient Indian history, art and literature up to the time of the Delhi Sultanate.

340. GREEK RELIGION. 3 cr.

An examination of the continuity of Greek religious experience from ancient times to the present and of the interconnection of ancient Greek religious ritual, moral experience and religious thought.

341. ROMAN RELIGION. 3 cr.

A study of Roman religious beliefs and practices with attention to the development of hero cults, oriental mystery religions and philosophical sects as alternatives to traditional religion.

342. CLASSICAL ARCHAEOLOGY. 3 cr.

A study of the archaeological discovery of classical civilization from the Greek Bronze Age through the Roman Empire. An introduction to the techniques of archaeological investigation.

DEPARTMENT OF ECONOMICS

Chairman: SOM PRAKASH, Ph.D.

REQUIREMENTS FOR THE MAJOR

Twenty-four semester hours are required for a major. These credits must include 121, 122, 123 or 212, 222 (121, 122 or 221, 222 are prerequisites to all advanced courses) and 321, 322.

Extradepartmental Requirements: Students planning to do graduate work in economics are advised to take calculus.

REQUIREMENTS FOR THE MINOR

Eighteen semester hours (321 and above) are required for a minor. The required introductory level courses are 121, 122 or 221, 222. In certain cases, it would be advisable to take 123 as an elective. It is strongly suggested that students having selected Economics as a minor, consult with the Economics Department chairman for advisement purposes.

COURSE DESCRIPTIONS ARE PROVIDED IN THE SCHOOL OF BUSINESS AND ADMINISTRATION SECTION OF THIS CATALOG ON PAGES 82-84.

DEPARTMENT OF ENGLISH

Chairman: JAMES P. BEYMER, M.A., J.D.

The chief purpose of the English program is to develop the student's powers to think critically about his life. To this end the Department's curriculum unites intensive and critical reading in a broad range of our literary heritage with close attention to the presentation of ideas in writing. Attention is also given to oral expression of ideas by means of dialogue between professor and student. Not only is the degree in English an excellent preparation for law school and for graduate work in English, education, and library science, but it also provides the liberal preparation which is sought by the business world generally for such areas as personnel, advertising, and management.

Prerequisites

English Composition 101 (or its equivalent) is a prerequisite for admission to English Composition 102; English Composition 102 (or its equivalent) is a prerequisite for admission to *all other courses offered by the department*.

The English Department further advises that two 200 level courses should be taken before the student attempts any 300 or 400 level course (except for 307 and 308).

REQUIREMENTS FOR THE MAJOR

The major is an individually-designed program of 24 hours of English Department courses above the 100 level. Each English major, with the close advice and approval of a member of the English faculty, designs a program to fit his background, interests, and career objectives.

REQUIREMENTS FOR THE MINOR

The minor consists of a minimum of 12 credit hours beyond the freshman level of which at least six must be taken at the 300 and 400 level.

There are four separate emphases that the student may follow:

1. *English Literature:* 201, 202 and six hours in upper division English Literature, courses 407 to 464.
2. *American Literature:* 205, 206 and six hours in upper division American Literature, courses 471 to 479.
3. *Writing:* 203 and nine hours in Writing Workshops, courses 380 to 383.
4. *Literary Genre:* 207, 208, or 209 with nine hours of upper division work in the corresponding genre (fiction, poetry, or drama) from the 300 and 400 offerings in English and American Literature.
5. *English Honors:* Students who, by invitation of the Department Honors Committee, complete English 212, 213, and two 300 Honors Seminars, may count that program as an English Minor.

HONORS PROGRAM

Students who give evidence of outstanding ability in English through their performance in English Composition 101 or by virtue of superior national test scores will be invited to participate in the English Honors program at the discretion of the departmental Honors Committee.

These students may apply Honors course credits to either an English major or minor, or may use these credits as electives. Further details concerning the Honors program are available through the department office and will be distributed to all nominees at the time of their recommendation for admission to the program.

101, 102. ENGLISH

COMPOSITION.

3 cr. each

Practice in effective writing. Review of principles of grammar and rhetoric; introduction to literary types and forms. 101 is prerequisite to 102.

103. ENGLISH COMPOSITION

HONORS.

3 cr.

An honors counterpart to 102. Composition and introduction to literary types and forms. Participation by invitation only.

201, 202. ENGLISH LITERATURE

SURVEY.

3 cr. each

Representative masterpieces of English literature in their literary and historical contexts.

203. ADVANCED WRITING.

3 cr.

The course is designed to build upon writing skills learned in Freshman Composition and centers chiefly on development of style and accuracy. Enrollment by instructor's permission only.

205. AMERICAN LITERATURE SURVEY

I—BEGINNING TO CIVIL WAR.

3 cr.

Representative selections from major American authors treated in both their literary and their historical contexts.

206. AMERICAN LITERATURE SURVEY

II—AFTER CIVIL WAR.

3 cr.

Representative selections from major American authors treated in both their literary and their historical contexts.

207. THE NOVEL.

3 cr.

An introduction to various types of American and British novels and the methods of discussing fiction.

208. POETRY.

3 cr.

Appreciation of British and American poetry; critical analysis of traditional and experimental poetic form; consideration of philosophical and social concerns of poetry.

209. DRAMA.

3 cr.

An historical survey of major dramatic forms through a selection of representative works by major playwrights from the classical tradition of Greece and Rome to the Theatre of the Absurd.

210, 211. READINGS IN WORLD

LITERATURE I, II.

3 cr. each

A survey of major literary works of the Western world from Homer to Cervantes (210) and from Moliere to Camus (211) with emphasis on continental traditions. The course explores both the thematic preoccupation of Western writers and the development and evolution of literary forms.

212, 213. ENGLISH LITERATURE

HONORS.

3 cr. each

Honors counterparts to 201, 202. Major British writers from Chaucer to Eliot. Participation by invitation only.

300. HONORS SEMINAR.

3 cr.

Special areas treated in these seminars will vary and will be designated in the schedule of courses each semester. Enrollment in the Honors Seminar is by invitation of the Honors Committee of the Department of English.

307. THE ENGLISH LANGUAGE.

3 cr.

An introduction to linguistic analysis with primary emphasis on the history of the structure of English from old to modern English.

308. APPLIED LINGUISTICS. 3 cr.
Practical uses of structural linguistics in the teaching of composition and literature.

**370, 371, 372, 373, 374, 375,
AND 376. SPECIAL STUDIES
IN ENGLISH.** 3 cr. each

Two or three courses in this sequence are offered every semester by the English Department to meet the current interests of both the students and the faculty. Examples of courses regularly offered are *Science Fiction; Literature, Myth, and the Modern World; The English Bible as Literature; Comparative Literature; The Film as Literature*.

**380, 381, 382, and 383.
WRITING WORKSHOPS.** 3 cr. each

One or more courses in this sequence are offered each semester in a workshop format designed to develop students' creative and/or technical writing skills. Examples of courses regularly offered are: *Poetry Workshop, Drama Workshop, Fiction Workshop, Writing for Business and Industry*. Admission by instructor's permission only.

The remainder of the English courses are divided into areas of emphasis. During a four-semester period, each course from each area will be offered at least once.

MEDIEVAL STUDIES

409. CHAUCER. 3 cr.
A study of *The Canterbury Tales* and minor poems.

**410. MEDIEVAL SPECIAL
TOPICS.** 3 cr.

Studies in the ideas and attitudes of the medieval period approached through one of its dominant genres such as the romance, the drama, the lyric, etc. or through some of its major writers other than Chaucer or through international readings in Old and Middle English, Old Icelandic, Medieval French and German (all read in English translation).

RENAISSANCE STUDIES

**413. SIXTEENTH CENTURY
ENGLISH LITERATURE.** 3 cr.
Survey including non-Shakespearean drama,

Sidney, Spenser, Shakespeare, Marlowe and minor figures.

**414. SEVENTEENTH CENTURY
ENGLISH LITERATURE.** 3 cr.
A survey of drama, prose and verse to 1660.

415. MILTON. 3 cr.
A survey of Milton and his times. A close scrutiny of the minor poems, and *Paradise Lost* and *Samson Agonistes*.

**419. RENAISSANCE SPECIAL
TOPICS.** 3 cr.

Studies in Renaissance thought and aesthetic in the works of one or more of its great writers: Spenser, Sidney, Donne, Jonson, etc. or through the ideas and attitudes conveyed in one of the dominant genres of the Renaissance: the lyric, the epic, the drama, etc.

SHAKESPEARE STUDIES

433. Shakespeare I. 3 cr.
Comedies and romances.

434. SHAKESPEARE II. 3 cr.
Tragedies and histories.

**439. SHAKESPEARE SPECIAL
TOPICS.** 3 cr.

Studies in Shakespeare relating his works to those of his contemporaries or concentrating on the problems of Shakespeare: biographical, aesthetic, and critical. Specific works and approaches to be selected by the instructor.

EIGHTEENTH CENTURY STUDIES

441. ENGLISH CLASSICISM. 3 cr.
Developments of neo-classical literature from the Restoration to the death of Pope. Primary attention given to Dryden, Swift and Pope.

**442. LATE EIGHTEENTH CENTURY
ENGLISH LITERATURE.** 3 cr.
Johnson and his circle, the development of the novel, the aesthetic movement.

**449. EIGHTEENTH CENTURY
SPECIAL TOPICS.** 3 cr.

Studies in Eighteenth Century thought and aesthetic in the works of one or more of its great writers: Dryden, Swift, Pope, Johnson, Blake, etc.; or through the ideas and attitudes

conveyed in one of the dominant genres of the Eighteenth Century: the drama, the novel, the essay, etc.

NINETEENTH CENTURY STUDIES

451. ENGLISH ROMANTIC LITERATURE. 3 cr.

A study of the aesthetic, moral, political, and literary aspects of English romanticism approached through the writings of Wordsworth, Coleridge, Byron, Shelley, Keats.

452. VICTORIAN LITERATURE. 3 cr.

A study of the poetry of Tennyson, Browning, Arnold and the prose of Arnold, Carlyle and Ruskin. Attention also given to the poetry of Morris, Rossetti and Fitzgerald.

459. NINETEENTH CENTURY SPECIAL TOPICS. 3 cr.

Studies in Nineteenth Century thought and aesthetic in the works of one or more of its great writers: Wordsworth, Tennyson, Browning, Dickens, Hardy, etc.; or through the ideas and attitudes conveyed in one of the dominant genres of the Nineteenth Century: poetry, the novel, the drama, etc.

TWENTIETH CENTURY STUDIES

461. EARLY TWENTIETH CENTURY LITERATURE. 3 cr.

Selective study of authors representing the major literary types and trends from about 1890 to 1930: Hardy, Moore, Butler, Conrad, Yeats, Hopkins, Joyce and Eliot.

462. CONTEMPORARY LITERATURE. 3 cr.

Major literary types and trends since about 1930: Woolf, Waugh, Greene, Auden, Spender, Thomas, Golding and others.

469. TWENTIETH CENTURY SPECIAL TOPICS. 3 cr.

Studies in Twentieth Century thought and aesthetic in the works of one or more of its major writers: Yeats, Joyce, Eliot, etc., or through the ideas and attitudes conveyed in one of the dominant genres of the Twentieth Century: poetry, the novel, the drama, etc.

AMERICAN STUDIES

471. EARLY AMERICAN LITERATURE. 3 cr.

A study of the literature of America's Colonial and Federalist periods, emphasizing the political and belletristic writings of an emerging nation.

472. AMERICAN ROMANTICISM. 3 cr.

A study of the Romantic movement in America with emphasis on Emerson, Thoreau, and Poe.

473. AMERICAN REALISM. 3 cr.

The rise of realistic fiction subsequent to the Civil War through the end of the century, emphasis on Twain, James and Howells.

474. MODERN AMERICAN LITERATURE. 3 cr.

A study of American prose and poetry from the end of World War I to the present, including Frost, Fitzgerald, Hemingway, Faulkner, Bellow, etc.

477. AMERICAN LITERATURE: SPECIAL STUDIES. 3 cr.

A course designed to reflect particular current interests of faculty and students alike. Topics can be drawn from a wide range of areas such as historical background, aesthetics, theme and motif; from specific studies of major authors or from tracing the development of dominant literary genres.

499. DIRECTED STUDIES. 3 cr.

FINE ARTS

Coordinator: MRS. PATRICIA S. INGRAM

Survey and period courses in the history of western art are offered by the Art Division of the Classics Department to introduce the concepts of art history

to those who wish to extend their visual perimeter and to understand the role of the visual arts in Western culture. Qualified students are advised to take collateral courses in classics, history, philosophy, and psychology, and additional upper division art history courses offered at member colleges of the Pittsburgh Council on Higher Education. In addition to personal enrichment and heightened awareness of man's will to create visual forms, the study of art history can lead to careers in teaching, publishing, museology, historic preservation, and urban redevelopment.

REQUIREMENTS FOR THE MINOR

The minor consists of 12 credits of 300- and 400-level courses. The prerequisites are six credits of introductory and survey courses at the 100- and 200-level or their adjudged equivalent. Areas of concentration include Ancient, American, and Modern art.

101. INTRODUCTION TO THE

VISUAL ARTS. 3 cr.

A study of the techniques and styles of architecture, sculpture, painting, and the graphic arts in western society, with an emphasis upon increasing the student's comprehension of our visually oriented culture. Recommended prerequisite for all upper division art history courses.

102. INTRODUCTION TO

MODERN ART. 3 cr.

An attempt to render accessible to the spectator the realities formulated by the artists of the last two decades. Formal analysis of the art object and examination of the motivational forces which shaped its creation lead to an overall view of the structural framework of twentieth century painting and sculpture. (Offered in alternate years)

201. HISTORY OF ART: ANCIENT TO GOTHIC.

3 cr.

A chronologically oriented, detailed presentation of the history of Western art. This survey deals with Near Eastern, Greek, Roman, Early Christian and Medieval art. Can be elected to fulfill the history/literature requirement.

202. HISTORY OF ART: RENAISSANCE TO MODERN.

3 cr.

A continuation of 201. Surveys Renaissance, Baroque and Modern art in Western Europe. Can be elected to fulfill the history/literature requirement.

203. FRENCH ART.

3 cr.

A survey which discusses ideas, schools, and styles in the history of French Art from the Roman occupation to the present. Areas of emphasis are Carolingian, Romanesque, Gothic, Renaissance, Rococo, and Modern art. (Offered in alternate years)

204. ART IN THE SPANISH ENVIRONMENT.

3 cr.

An examination of a selected group of art objects created in Spain from prehistoric to modern times. The aim of this course is to define the dramatic intensity of the imagery, forms, and content of these art objects.

205. MAJAS, MADONNAS, AND MYTHS.

3 cr.

An exploration of the image of woman as it has been portrayed throughout the ages by the artist, both male and female. Emphasis is on the analysis of themes relating to female imagery as well as formal consideration of the work of art.

301. GREEK ART.

3 cr.

A study of the architecture, sculpture, vase painting, and minor arts of the Greek world from Minoan to Hellenistic times. The student is introduced to the extensive vocabulary of Greek art which has been a continuing formative force in western art. (Offered in alternate years)

302. ROMAN ART.

3 cr.

An introduction to Roman innovations in

architecture, sculpture, and painting. The background of Roman art in Etruscan, Greek, and Egyptian civilizations is investigated, and the impact of Roman art in formulating Christian Art, Renaissance Art and Neo-Classicism is analyzed. (Offered in alternate years)

312. LATE MEDIEVAL ART. 3 cr.

Western European Art from the 11th to the 14th century. Focus is upon the development of stone vaulting systems, monumental architectural sculpture, stained glass, fresco and panel painting, and illuminated manuscripts in England, France, Italy, and Germany. (Offered in alternate years)

321. 15th CENTURY RENAISSANCE ART. 3 cr.

An investigation of the Renaissance spirit of the 15th century. Concentration is upon comparisons of Northern and Southern attitudes to man, nature, and social structure, and to materials, techniques, pictorial representation, and iconography. (Offered in alternate years)

331. ART OF THE 19th CENTURY. 3 cr.

A survey of the visual arts in the 19th century. The visual arts not only reflect the dramatic changes in the artists' use of form, color, line, texture and light, but also emphasize the changing political, religious, and social values in society.

332. ART OF THE 20th CENTURY. 3 cr.

A chronological study of 20th century painting and sculpture which "looks beyond visual perception and tries to find the essence and meaning of reality." From cubism to conceptual art, from Picasso to Pollock and Pop, this course offers a thorough exploration of the visual arts of the 20th Century.

341. AMERICAN PAINTING AND SCULPTURE. 3 cr.

An examination of the forms created by American painters and sculptors from the early 17th through the late 20th century. A special class intent involves arriving at a clear understanding of Americans' concept of reality during these years, particularly in the 20th century.

342. AMERICAN ARCHITECTURE. 3 cr.

Construction, style, building types, and concepts of city planning in American architecture from the 17th century to the present. Field trips to important monuments in the Pittsburgh area, including Falling Water, are scheduled.

431. SELECTED READINGS: VARIABLE TOPICS. 3 cr.

In-depth research, using the resources of Pittsburgh area libraries and of source material relevant to the history of Western art. Weekly seminars are conducted, trips to local and out-of-town museums are arranged, and individual research is programmed. Prerequisite: Permission of instructor.

DEPARTMENT OF HISTORY

Chairman: SAMUEL J. ASTORINO, Ph.D.

The Department of History offers a program devoted to the study of mankind in diverse cultural settings through time. A large number of courses are taught by a faculty reflecting a variety of philosophical and methodological outlooks. Apart from the fact that the program fully meets the needs of students intending to pursue graduate work in historical studies, the history major will be well prepared for careers in law, business, or government service. Most importantly, the discipline of history provides an excellent synthesis of the liberal-arts education since it effectively joins together the humanities and the social sciences.

REQUIREMENTS FOR THE MAJOR

At least 24 credits in addition to 111, 112 or 113, 114. Of these 24 credits, at least six credits must be taken in American and six credits in European history; at least six credits from the sophomore survey courses, 211, 212, 221, 222, 231, 232 (twelve credits from this level are recommended); and three credits of an undergraduate historiography course, 481, 483, or 484. Transfer students may apply for equivalency.

The stated requirements aim to provide the student with a structured program of learning within which considerable flexibility is encouraged. 111, 112 acquaints the student with the basic themes of world history; 113, 114 deals with the history of the West. A variety of second-year survey courses supply essential knowledge of the major periods of European and American history. Upper and advanced-level courses provide intensive studies of historical methodology of the major cultural areas of the world and of significant themes in history.

A maximum of 12 transfer credits in history can be applied to the major requirements.

REQUIREMENTS FOR THE MINOR

Students who wish to minor in history should consult with the department's undergraduate advisor. The student is required to take 12 hours beyond 111, 112 or 113, 114 including either 221, 222 or 231, 232; the remaining six credits should be scheduled with the advice of the department advisor.

INTRODUCTORY SURVEYS

111, 112. APPROACHES TO WORLD HISTORY.

3 cr. each

A survey of world history covering important aspects of human evolution. The first semester deals with prehistory and the major civilizations. The second semester concentrates on major trends significant to the development of the contemporary world.

113, 114. WESTERN CIVILIZATION.

3 cr. each

An introductory survey of the origins and characteristics of European Civilization, emphasizing the personalities and events and institutions that have made the West the dominant global power today.

211. THE ANCIENT WORLD.

3 cr.

A survey of the ancient cultures and their contribution to civilization with emphasis on the Greeks and the Romans.

212. EUROPE IN THE FEUDAL AGE.

3 cr.

The world of the Middle Ages—a survey of medieval men's political, social, and cultural activities.

221. EUROPE FROM RENAISSANCE TO REVOLUTION.

3 cr.

The history of Europe from the fourteenth through the eighteenth centuries—the era of transition and change from the medieval to the modern world.

222. EUROPE: INDUSTRIALISM AND THE MASSES.

3 cr.

A historical analysis of Europe in the last two centuries, with particular attention to the relationship between technological and social change and its impact on politics and culture.

231. DEVELOPMENT OF THE UNITED STATES TO 1877.

3 cr.

The historical development of American institutions, ideals, and society from earliest times to 1877.

232. DEVELOPMENT OF THE UNITED STATES SINCE 1877. 3 cr.

The historical development of American institutions, ideals, and society since 1877.

TOPICAL AND AREA SURVEYS

253. THE MIDDLE EAST FROM MUHAMMED TO NAPULEAN. 3 cr.

A historical survey of the Near east from the rise of Islam to the decline of the Ottoman state, with particular attention to political, social, and cultural trends.

254. THE HISTORY OF THE MODERN MIDDLE EAST. 3 cr.

A study of the modern Near East with concentration upon the conflict between imperialism and nationalism, traditionalism and western influences, in the area.

255, 256. HISTORY OF ASIA. 3 cr. each

A survey of Asian civilization from ancient times to the present day; western colonialism; the rise of the nationalist movement; and the establishment of modern states.

257, 258. RUSSIAN HISTORY. 3 cr. each

Development of society and state in Russia from their origins to the twentieth century.

259, 260. EAST-CENTRAL EUROPE. 3 cr. each

The medieval and modern history of the small nations situated between Russia and Germany on the east and west, and the Baltic and Mediterranean Seas on the north and the south.

261. LATIN AMERICA: COLONIAL PERIOD. 3 cr.

From the Age of Discovery through the revolutions of the early 19th century.

262. LATIN AMERICA: NATIONAL PERIOD. 3 cr.

From the revolutions to the present, with emphasis on Argentina, Brazil, Chile, and Mexico.

263. THE COLONIAL PERIOD—WESTERN HEMISPHERE. 3 cr.

A comparative examination of the economic,

social, and political factors influencing European expansion to 1880.

265. ENGLAND BEFORE 1715. 3 cr.

The foundations of England, emphasizing the origins of the common law, the rise of parliament, the development of English society, and England's contribution to western thought.

266. MODERN BRITAIN. 3 cr.

A study of the first industrial nation, with special attention to the achievement of constitutional monarchy, the social and economic problems of industrialization, the nature of British imperialism, and the problems faced in the 20th century.

267. CANADA. 3 cr.

An introduction to Canadian history, with particular attention to the years from 1763 to the present, and to Canadian-American relations and contemporary Canada.

269, 270. CHINA. 3 cr. each

A survey of social, economic, political, and cultural changes before and after the establishment of the People's Republic of China.

274. CHURCH HISTORY I. 3 cr.

A religious and historical exploration of the growth of Christianity from the first century up to the Reformation; discussion of those issues within the Church and the external forces which brought about major conflict and development.

275. CHURCH HISTORY II. 3 cr.

Selected topics in Catholic and Protestant development from 1500 to the present day; special emphasis on the crises, revolutions, and reforms that were central to this development.

307, 308. HISTORY OF SCIENCE. 3 cr. each

A survey exploring the significance of scientific developments within the historical and social context of Western culture.

325. GREEK HISTORY. 3 cr.

An examination of the development of Greek history and culture from earliest times up to the death of Alexander of Macedon.

326. HELLENISTIC HISTORY. 3 cr.
A survey of Mediterranean history from the death of Alexander until the accession of Octavian and the establishment of the Roman principate.

337. ROMAN IMPERIAL HISTORY. 3 cr.
A study of the consolidation and dissolution of the Roman imperial structure up to the death of Justinian in 565 B.C.

338. ANCIENT INDIAN HISTORY. 3 cr.
An investigation of ancient Indian history, art and literature up to the time of the Muslim invasion.

382. PSYCHOHISTORY. 3 cr.
Examines the inter-relationships between psychology—especially psychoanalysis—and history: Psychology leadership of group behavior, of war, etc.

386. HISTORICAL GEOGRAPHY. 3 cr.
A survey of the physical world which is the basis for a human civilization, past present, and future. What are the possibilities and limitations of different places for human development? How successful or unsuccessful were human settlements? Emphasis also on geography as an intellectual discipline and cultural phenomenon.

AMERICAN POLITICAL AND DIPLOMATIC HISTORY

348. MODERN AMERICAN MILITARY HISTORY. 3 cr.
A systematic study of modern U.S. wars from 1914 to the present. The course focuses on the political, social and economic conditions leading to each major conflict; evaluates in general terms the conduct of military operations, and assesses the impact of the conflict upon the Armed Forces and the Nation. Special emphasis is placed upon the role of the U.S. in world affairs, modernization of the Armed Forces, military-business relationships, raising and maintaining a military establishment, and civilian-military relationships.

351. DIPLOMATIC HISTORY OF UNITED STATES I. 3 cr.
From the Revolution to 1890 with the emphasis upon the establishment of the nation and its diplomatic methods and goals.

352. DIPLOMATIC HISTORY OF UNITED STATES II. 3 cr.
The second half of the course will be Diplomatic History of the United States 1890 to present. Emphasis is upon involvement of the United States in both World Wars and its role as an imperial power.

357. HISTORY OF THE AMERICAN PRESIDENCY. 3 cr.
Primarily an investigation and evaluation—personal, political, contemporary, and historical—of each president with some attention to the growth of the office.

358. CIVIL WAR AND RECONSTRUCTION. 3 cr.
An intensive study of the American experience before and after the War for the Union.

360. CONSTITUTIONAL HISTORY OF THE UNITED STATES. 3 cr.
An analysis of the Supreme Court and constitutional development, stressing the major controversies in the field.

361, 362. HISTORY OF THE UNITED STATES' POLITICAL PARTIES. 3 cr. each
A detailed examination and analysis of the origins, leadership, and operation of the major political parties in the U.S.

INTELLECTUAL AND CULTURAL HISTORY

363. CULTURAL HISTORY OF MEDIEVAL EUROPE. 3 cr.
The development of the body of literature, secular and religious, from the decline of the Roman Empire to the Renaissance.

365. THE ORIGINS OF THE MODERN MIND. 3 cr.
Intellectual changes between 1300 and 1800 that set the stage for the modern temper.

366. THE MODERN MIND.**3 cr.**

The major ideological tendencies of modern European thought and their connection to society and politics, and to the major philosophical and scientific currents of the nineteenth and twentieth centuries.

367. THE IMPACT OF SCIENCE ON SOCIETY.**3 cr.**

The economic, social and cultural consequences of the rise of modern science.

368-369. THE AMERICAN MIND**I, II.****3 cr. each**

The origins, development, and contemporary modes of American thought, including major "climates of opinion," diverse movements, and selected scientific, political, religious, social, and artistic topics.

EUROPEAN POLITICAL AND DIPLOMATIC HISTORY**373, 374. DIPLOMATIC HISTORY OF THE FAR EAST.****3 cr. each**

Western imperialism in Asia; rise of Asian nationalism, analysis of international problems in current tension areas.

377. EUROPEAN EMPIRE IN THE NINETEENTH CENTURY.**3 cr.**

Examines the growth of the great colonial empires in the nineteenth century and their decline before the forces of nationalism.

378. EUROPEAN DIPLOMATIC HISTORY, 1870-1960.**3 cr.**

A study of European international politics since 1870, with emphasis upon the major developments, their origins and historical significance, and the evolving styles of diplomacy.

379. REVOLUTIONS IN THE MODERN WORLD.**3 cr.**

An analysis of the major political and social revolutions in Europe since 1789, the nature of the revolutionary phenomenon, and the inevitable counter-revolutionary trend.

380. EUROPEAN FASCISM.**3 cr.**

An intensive study of the major fascist movements and regimes of the twentieth century in

light of the political, economic, social, intellectual, and psychological tensions which produced them.

SOCIAL HISTORY**370. CURRENT HISTORY.****3 cr.**

What are the major forces affecting our lives today? Where do they come from? Where will they lead to? Resources will be current media such as newspapers, TV, etc.

385. WOMEN IN HISTORY.**3 cr.**

The too often neglected history of one-half of the human race, with special emphasis on the life experience of women in past ages.

387. FRONTIER, ENVIRONMENT, AND UTOPIA.**3 cr.**

A historical view of man's attempts to create new societies, concentrating upon ecological issues, world frontier experiences, and utopian or futurist ventures.

389. SOCIAL HISTORY OF MODERN EUROPE.**3 cr.**

An examination of major demographic, economic, and social trends in modern European history.

391. SOCIAL HISTORY OF RUSSIA.**3 cr.**

The study of the development, role, and interrelations of the social classes in Russia and the Soviet Union, and in East Central and South-eastern Europe.

392. THE EAST EUROPEAN ETHNIC (IMMIGRANT) EXPERIENCE.**3 cr.**

The examination of the social and economic conditions and cultural milieu that the various waves of East European immigrants left behind in Europe and found in America, and the study of their inter-ethnic relationships and adjustment to American society.

393. ECONOMIC HISTORY OF THE UNITED STATES TO 1865.**3 cr.**

Investigates the economic factors in the development of the U.S. and their impact on social and political issues.

394. UNITED STATES' LABOR HISTORY.**3 cr.**

Concentrates chiefly on the relations between worker and employer from the early craftsmen to the industrial union member.

395. URBAN HISTORY: UNITED STATES.**3 cr.**

The rise of urban America, from the colonial period to World War I.

396. HISTORY OF AMERICAN IMMIGRATION SINCE 1880.**3 cr.**

Focuses on the nature and problems of the more recent immigrant, his cultural contributions, the effects of selectivity and changing native attitudes.

397. REFORM IN MODERN AMERICA.**3 cr.**

A study of political, economic, and social reform movements in the United States since the late nineteenth century.

398. ECONOMIC HISTORY OF THE UNITED STATES SINCE 1865.**3 cr.**

Investigates the economic development of the United States after the Civil War, emphasizing

its impact on social and political issues as background for current economic problems.

399. THE SEARCH FOR IDENTITY—UNITED STATES SINCE 1945.**3 cr.**

A discussion of selected contemporary issues, foreign and domestic, which illustrate the identity crisis in the U.S.

HISTORIOGRAPHY**481. THE MODERN HISTORIAN.****3 cr.**

The development of modern historical thinking and scholarship as it is related to the major intellectual and social currents of modern times.

483. SPECIAL PROBLEMS IN EUROPEAN HISTORY.**3 cr.**

Emphasizes the conflict among historians over interpretations of significant events in European history.

484. SPECIAL PROBLEMS IN AMERICAN HISTORY.**3 cr.**

Emphasizes the conflict among historians over interpretations of significant events in American history.

DEPARTMENT OF JOURNALISM

Chairman: NANCY C. JONES, Ph.D.

The Department of Journalism tries to integrate the liberal education of a student by emphasizing how a professional education for a career in the mass media relies on the liberal arts tradition. The journalism curriculum concentrates upon the development of communicative skills for creative and responsible positions in such areas of mass communication as advertising, broadcasting, newspapers, public relations, magazines and specialized publications.

REQUIREMENTS FOR THE MAJOR

Twenty-seven semester hours are required for a major. Required courses are: 167, 267, 268, 367, 369, 376 and 466 or 468 or 470 or 476.

REQUIREMENTS FOR THE MINOR

Eighteen semester hours credit are required for a minor. Credits must include: 167, 267, 268, and nine other journalism credits approved by the head of the

Department of Journalism. Minors do not qualify for the Department's Professional Internship program.

167. INTRODUCTION TO MASS COMMUNICATIONS.

3 cr.

An introduction to the role, principles, and responsibilities of newspapers, broadcasting, magazines, advertising and public relations. Course open to non-majors. (Offered both semesters)

267. BASIC REPORTING AND WRITING I.

3 cr.

Fundamentals of news reporting and writing. Applied practice in laboratory sections.

268. BASIC REPORTING AND WRITING II.

3 cr.

Advanced writing of the more complex types of news stories. Applied practice in laboratory sections. Two hours lecture. Prerequisite: 267.

367. RADIO-TELEVISION: PRINCIPLES AND WRITING.

3 cr.

A lecture-laboratory course in the study and application of writing principles and practices for radio and television. Two hours lecture, two hours laboratory. Open to non-majors. Prerequisites: 267, 268, or approval of Department.

369. ADVERTISING: PRINCIPLES AND WRITING.

3 cr.

A lecture-laboratory course in the study and application of writing principles and practices for advertising. Two hours lecture; two hours laboratory. Open to non-majors. Prerequisites: 267, 268, or approval of Department.

370. DEVELOPING THE BROADCAST PROGRAM.

3 cr.

Creation, development and presentation of the radio and television program including documentaries, panels, dramatic and non-dramatic programs. Theory and practice of direction. Two hours lecture; two hours laboratory. Prerequisite: 367 or approval of Department.

371. MASS COMMUNICATIONS AND PUBLIC OPINION.

3 cr.

A study of the nature of public opinion and the mass communications process, effects of propa-

ganda, and barriers to effective communication. Open to Juniors and Seniors.

372. COMMUNICATIONS LAW.

3 cr.

A study of the legal rights, responsibilities and ethics of the mass media. Open to Juniors and Seniors.

375. EDITING.

3 cr.

A lecture-laboratory course in editing and presenting the written word for the mass media. Prerequisite: 267 or approval of Department.

376. HISTORY OF THE MASS MEDIA.

3 cr.

Concentrated lecture-discussion course in an historical context of major social influences affecting American Journalism from the colonial press period to contemporary society. Open to Juniors and Seniors.

378. PHOTOGRAPHY FOR JOURNALISTS.

3 cr.

A lecture-laboratory course in the preparation and use of photography for publication. Fundamentals of camera work developing, printing, print evaluation and editorial uses of photography emphasized. Prerequisite: 267 or approval of Department.

380. SPECIALIZED PUBLICATIONS.

3 cr.

A study of association, business, industrial, professional and religious communications with emphasis on the internal and external publications in industry. Prerequisites: 167, 267, 268, 375.

405. ADVANCED WRITING FOR JOURNALISM.

3 cr.

A lecture-laboratory course in gathering and interpretive writing of news of urban affairs. Analysis of major political, economic, and social developments that have local news interest and significance. Two hours lecture; two hours laboratory. Prerequisites: 267, 268.

409. ADVANCED WRITING FOR ADVERTISING.

3 cr.

A lecture-laboratory course in copywriting and design for advertising. Two hours lecture; two hours laboratory. Prerequisite: 369.

411. ADVANCED WRITING FOR MAGAZINES.**3 cr.**

A lecture-laboratory course in writing for the general and specialized magazine. Two hours lecture; two hours laboratory. Open to Juniors and Seniors.

413. ADVANCED WRITING FOR RADIO AND TELEVISION.**3 cr.**

A lecture-laboratory course in writing for Radio and Television. Two hours lecture, two hours laboratory. Prerequisite: 367.

420. INTERNATIONAL COMMUNICATIONS.**3 cr.**

A study of world news systems and an analysis of their roles as instruments of world understanding. Open to Juniors and Seniors.

430. PUBLIC RELATIONS:**PRINCIPLES AND WRITING.****3 cr.**

Study of the principles and concepts of public relations, needs, significance and influence. Analysis of various publics constituting the whole public. Case studies. Applications of principles in student research projects. Open to Juniors and Seniors.

441. SECONDARY SCHOOL COMMUNICATIONS.**3 cr.**

Function of publications and broadcasting in the secondary school. Role and responsibilities of school-press advisors. Teaching of Journalism on the high school level. Course is directed at students seeking a Pennsylvania teacher's certificate in communication with emphasis in high school journalism. Open to Juniors and Seniors. Prerequisites: 167, 267.

466. PROFESSIONAL INTERNSHIP:**ADVERTISING.****3 cr.**

A supervised observation-experience program of study and assignment to an assigned advertising agency or industrial advertising department in conjunction with the American Association of Industrial Advertisers, Pittsburgh Chapter. Pre-

requisites: 167, 267, 268, 367, 369, 376, 409. (Offered both semesters)

468. PROFESSIONAL INTERNSHIP: BROADCASTING.**3 cr.**

A supervised observation-experience program of study and assignment to an assigned commercial/educational broadcasting station in the Pittsburgh area. Prerequisites: 167, 267, 268, 369, 370, 376, 413. (Offered both semesters)

470. PROFESSIONAL INTERNSHIP:**NEWSPAPERS.****3 cr.**

A supervised observation-experience program of study and assignment to a member newspaper of the Pennsylvania Newspaper Publishers Association in Allegheny County. Prerequisites: 167, 267, 268, 367, 369, 375, 376, 405. (Offered both semesters)

476. PROFESSIONAL INTERNSHIP:**PUBLIC RELATIONS.****3 cr.**

A supervised observation-experience program of study and assignments to an assigned public relations agency, association, industrial, or non-profit educational group in the Pittsburgh area. Prerequisites: 167, 267, 268, 367, 369, 375, 376, 380, 430. (Offered both semesters)

485. INDUSTRIAL ADVERTISING.**3 cr.**

Deals with the principles and practices of industrial marketing communications. Emphasis will be placed on trade-paper ads, direct-mail advertising, descriptive product folders, sales letters and presentations. Examination will be made of related crafts such as commercial art, typography, printing, plate-making and media selection. Prerequisites: 167, 267, 268, 367, 369, 376.

490. INDIVIDUAL PROJECTS IN**MASS COMMUNICATIONS.****1-3 cr.**

Individual research projects in the mass media. Open to junior and senior majors only. Prerequisite: Permission of instructor and department chairman.

DEPARTMENT OF MATHEMATICS

Chairman: ROBERT G. McDERMOT, Ph.D.

The Department of Mathematics offers a sequence of modern courses which will (a) aid the student in developing his ability to think scientifically and form independent judgments; (b) provide the student with a breadth and depth of knowledge concerning not only manipulative skills but also fundamental and essential theory; (c) enable the student to use his knowledge in the formulation and solution of problems; and (d) give the student the necessary basis or foundation for the pursuit of graduate study or productive effort at the bachelor level.

REQUIREMENTS FOR THE MAJOR

Bachelor of Arts Degree. A minimum of 32 semester hours is required. These must include 115, 116, 215, 216, 303, 415, 416; the remainder must be selected from courses numbered above 300. Exceptionally able seniors are encouraged to seek departmental approval to include 500 level mathematics courses listed in the graduate catalog.

Bachelor of Science Degree. A minimum of 32 semester hours is required. These must include 115, 116, 215, 216, 303, 415, 416; the remainder must be selected from courses numbered above 300. Exceptionally able seniors are encouraged to seek departmental approval to include 500 level mathematics courses listed in the graduate catalog.

Twenty hours of science courses is an extra-departmental requirement; this must include Physics 211, 212. The remaining courses may be selected from Biology 111, 112 and 226 and above, Chemistry 121 or higher, and Physics above 212.

REQUIREMENTS FOR THE MINOR

A minor must include 115 and 14 additional credits selected from courses numbered above 115 but not including 117; 116 must be included.

For science majors, 215, 216, 315, 321 are recommended.

For economics and social science majors, 222 or 308, 225 or 301, 306 are recommended.

101. ELEMENTARY MATHEMATICS.

3 cr.

A remedial course in the fundamentals of algebra, including the solution of equations and inequalities. Not to be counted toward a major, minor or the mathematics/science area requirement.

103, 104. FINITE MATH- EMATICS I, II.

3 cr. each

A course meeting the needs of non-science students in the College for an introduction to some of the applications of mathematics in the world today. It provides an introduction to matrices and linear systems, linear pro-

gramming, probability and statistics, game theory and computers. Not counted toward a major or minor.

105. COLLEGE ALGEBRA AND TRIGONOMETRY. 4 cr.

A modern course in college algebra and analytic trigonometry for those students who do not possess the prerequisites for 115. Not counted toward a major or minor.

107, 108. INTRODUCTION TO MODERN MATHEMATICS I, II. 3 cr. each

This course is designed for elementary education students in the School of Education. Not to be counted toward a major, minor, or the mathematics/science area requirement.

109. COLLEGE ALGEBRA. 3 cr.

A traditional course in college algebra for students who are not prepared for 111. Not counted toward a major or minor. Credit will not be allowed for both this course and 105.

111. CALCULUS FOR NON-SCIENCE STUDENTS. 3 cr.

Differentiation and integration of algebraic, logarithmic, and exponential functions, maxima and minima, area, exponential growth. Not counted toward a major. Credit will not be allowed for both this course and 115.

115, 116, 215. CALCULUS I, II, III. 4 cr. each

A unified course in analytic geometry and calculus. Considers theory of limits, functions, differentiation, integration, series, geometry of space, functions of several variables, and multiple integration. Students will be introduced to Fortran programming. Prerequisites for 115: Two years of algebra, one year of plane geometry, and one-half year of trigonometry.

117. FORTRAN PROGRAMMING. 1 cr.

A study of Fortran and Fortran programming. Credit will not be allowed for both this course and 115.

216. ORDINARY DIFFERENTIAL EQUATIONS. 3 cr.

The course includes solutions, existence of solutions, and applications of differential equations. Prerequisite: 215.

221. HISTORY OF MATHEMATICS. 3 cr.

This is a survey of the historical development of mathematics. Prerequisite: One year of College Mathematics, preferably including one semester of calculus. Not counted toward a major.

222. BASIC COMPUTER SCIENCE. 3 cr.

An introduction to programming electronic digital computers, operating systems and compilers. Machine language and an assembly language are presented and used to solve several problems. Prerequisite: One year of high school algebra. Not counted toward a major.

225. FUNDAMENTALS OF STATISTICS. 3 cr.

A basic course in probability theory and descriptive and inferential statistics for non-majors. Prerequisite: High school algebra. Not counted toward a major.

301, 302. INTRODUCTION TO PROBABILITY AND STATISTICS I, II. 3 cr. each

A mathematical treatment of probability theory and mathematical statistics including probability distributions, random variables and their transformations, expectation, point and interval estimation, and sampling distributions. Prerequisite: 116 or equivalent.

303. PRINCIPLES OF MODERN ALGEBRA. 3 cr.

A study of basic properties of groups, rings, modules, and fields. Prerequisites: 115, 116.

306, 307. LINEAR ALGEBRA I, II. 3 cr. each

A study of linear transformations and matrices. Prerequisites: 115, 116.

308. NUMERICAL ANALYSIS. 3 cr.

A computer oriented course in numerical analysis introducing elementary techniques for numerical solution of problems. A knowledge of Fortran or equivalent language is assumed. Prerequisite: 215.

311. INTRODUCTION TO NUMBER THEORY. 3 cr.

A discussion of divisibility, congruences, quad-

ratic residues, diophantine equations and arithmetical functions. Prerequisite: Proficiency at 105 level.

315. ADVANCED DIFFERENTIAL EQUATIONS.

3 cr.

Principally theoretical, this course considers the methods of solutions as well as existence and uniqueness of solutions, applications, and partial differential equations. Prerequisite: 216.

321. MATHEMATICAL CONCEPTS FOR PHYSICS.

3 cr.

A survey of the mathematical concepts used in undergraduate physics, especially quantum mechanics. Topics covered include vector analysis, matrix theory, complex function theory. Fourier series and calculus of variations. Prerequisite: 216.

401. FUNDAMENTALS OF GEOMETRY.

3 cr.

The course considers topics in Euclidean and Non-Euclidean geometry; also synthetic, projective, and affine geometrics, and some topology. Prerequisite: 215. Not offered in regular sequence, but available on request.

403. INTRODUCTION TO POINT SET TOPOLOGY.

3 cr.

A survey of elementary topics including topo-

logical spaces, compactness, connectedness, convergence and separation axioms. Prerequisite: 215. Not offered in regular sequence, but available on request.

405. INTRODUCTION TO COMPLEX VARIABLES.

3 cr.

Topics include the plane of complex numbers, functions of a complex variable and integration in the complex plane. Prerequisite: 216. Not offered in regular sequence, but available on request.

415, 416. ADVANCED CALCULUS I, II.

3 cr. each

A rigorous study of the calculus and its foundation. Prerequisite: 216.

431. INTRODUCTION TO BIOSTATISTICS.

3 cr.

Intended primarily for upper level pharmacy and biology students; acquaints the student with some of the common statistical techniques applied to research and data analysis in the life sciences. Not counted toward a major.

491 to 499. SELECTED TOPICS IN MATHEMATICS.

1-3 cr. each

This is an honors course. Topics selected in consultation with staff.

DEPARTMENT OF MODERN LANGUAGES AND LITERATURES

Chairman: FRANCES COLECCHIA, Ph.D.

Two "tracks" of language teaching on the elementary and intermediate level are offered in French, German, and Spanish, both of which satisfy college degree requirements. One of these emphasizes reading and the other reading, writing, speaking, and the aural comprehension. In the conversation and composition courses, the student's fluency in the active use of the language is strengthened. Subsequent courses stress primarily literary studies in which the student is systematically introduced to a survey of the literature and is given a working acquaintance with the culture of the groups whose language he is studying. He is also presented a choice of courses dealing with specific works, authors, and auxiliary subjects.

Career opportunities for a student having a knowledge of foreign languages are in the fields of teaching, state employment, foreign service, and industry.

REQUIREMENTS FOR THE MAJOR

The department offers major programs in French, German, and Spanish, and nonmajor courses in Russian and Italian.

The major program in Modern Languages and Literatures consists of a minimum of 24 semester hours above the 200 level. Required courses are:

French: 301, 302, 465, 466. Majors will discuss their courses with the Director of the Section.

German: 301, 302, 463, 464. Majors will discuss their courses with the Director of the Section.

Spanish: 301, 302; 312 (or 314 or 316); 401, 402, 420; 451, 452. Additional courses open to qualified undergraduates are: 504, 505, 453, 454, 461, 462.

Courses taken out of progression will not carry credit. *Credit will not be given for both 201, 202 and 211, 212, which are intermediate level courses.* 302 is prerequisite to all 400 courses; 400 courses are conducted in the respective language.

On the elementary and intermediate levels, special sections are provided to foster work of greater range and depth by students whose interests and abilities make them eligible.

Junior Year Abroad. Majors are strongly encouraged to participate. Further information may be obtained at the Department Office.

REQUIREMENTS FOR THE MINOR

The minor program consists of a minimum of 12 semester hours above the 200 level.

351. INTRODUCTION TO THE STUDY OF LANGUAGE.

3 cr. each

491. EUROPEAN LITERATURE IN TRANSLATION.

3 cr. each

Translation taken from German, French, Spanish, Russian or a combination of those languages.

FRENCH

101, 102. ELEMENTARY

FRENCH.

3 cr. each

Fundamentals of oral and written French. Three hours lecture and one hour laboratory each week.

111, 112. ELEMENTARY FRENCH

FOR READING.

3 cr. each

The course will stress basic grammar and structure for reading comprehension.

201, 202. INTERMEDIATE FRENCH.

3 cr. each

An intensified review and continuation of 101, 102. Prerequisite: 102 or equivalent.

211, 212. INTERMEDIATE FRENCH FOR READING.

3 cr. each

Prerequisite: 102 or 112.

239, 240. READINGS IN MODERN FRENCH AUTHORS.

3 cr. each

Selections from modern works of literature. Does not carry credit toward a major.

301, 302. FRENCH CONVERSATION AND COMPOSITION.

3 cr. each

These two courses, or their equivalents, are prerequisites for all of the following courses.

312, 314, 316. LITERATURE WORKSHOP.

3 cr. each

465, 466. SEMINAR IN FRENCH LITERATURE AND COMPOSITION. Var. cr.
Variable topics.

GERMAN

101, 102. ELEMENTARY GERMAN. 3 cr. each
Fundamentals of oral and written German. Three hours lecture and laboratory each week.

111, 112. ELEMENTARY GERMAN FOR READING. 3 cr. each
The course will stress basic grammar and structure for reading comprehension.

201, 202. INTERMEDIATE GERMAN. 3 cr. each
An intensified review and continuation of 101, 102. Prerequisite: 102 or equivalent.

211, 212. INTERMEDIATE GERMAN FOR READING. 3 cr. each
Prerequisite: 102 or 112.

239, 240. READINGS IN MODERN GERMAN AUTHORS. 3 cr. each
Selections from modern works of literature. Prerequisite: 202 or equivalent.

249, 250. READINGS IN SCIENTIFIC GERMAN. 3 cr. each
Designed for students in scientific and technical curriculums. Prerequisite: 201 or three years of high school German.

301, 302. CONVERSATION BASED ON 19th CENTURY LITERATURE. 3 cr. each
This course is prerequisite to all courses above 400 and is required of all majors in German. Prerequisite: 202 or equivalent.

463, 464. SEMINAR IN GERMAN LITERATURE AND COMPOSITION. Var. cr.
Variable topics.

ITALIAN

101, 102. ELEMENTARY ITALIAN. 3 cr. each
Fundamentals of oral and written Italian. Three lecture hours and one hour laboratory each week.

111, 112. ELEMENTARY ITALIAN FOR READING. 3 cr. each
The course will stress basic grammar and structure for reading comprehension.

201, 202. INTERMEDIATE ITALIAN. 3 cr. each
An intensified review and continuation of 101, 102. Prerequisite: 102 or equivalent.

211, 212. INTERMEDIATE ITALIAN FOR READING. 3 cr. each
Prerequisite: Italian 102 or 112.

RUSSIAN

101, 102. ELEMENTARY RUSSIAN. 3 cr. each
Fundamentals of oral and written Russian. Three hours lecture, one hour laboratory each week.

201, 202. INTERMEDIATE RUSSIAN. 3 cr. each
Intensified review and continuation of 101, 102. Prerequisite: 102 or equivalent.

239, 240. READINGS IN MODERN RUSSIAN AUTHORS. 3 cr. each
Selections from modern works of literature. This course is given by arrangement only. Prerequisite: 202 or equivalent.

301, 302. CONVERSATION BASED ON RUSSIAN LITERATURE. 3 cr. each

313, 314, 315, 316. WORKSHOP 3 cr. each

SPANISH

101, 102. ELEMENTARY SPANISH. 3 cr. each
Fundamentals of oral and written Spanish. Three hours lecture, one hour laboratory each week.

111, 112. ELEMENTARY SPANISH FOR READING. 3 cr. each
The course will stress basic grammar and structure for reading comprehension.

201, 202. INTERMEDIATE SPANISH. 3 cr. each
An intensified continuation of 101 and 102. Course 202 or equivalent is prerequisite for all

the following courses. Prerequisite: 102 or equivalent.

211, 212. INTERMEDIATE SPANISH FOR READING. 3 cr. each
Prerequisite: 102 or 112.

239. READINGS IN MODERN SPANISH AUTHORS. 3 cr.

240. READINGS IN MODERN SPANISH-AMERICAN AUTHORS. 3 cr.

301, 302. SPANISH CONVERSATION AND COMPOSITION. 3 cr. each
302 or its equivalent is a prerequisite to all courses above 400.

313, 314, 315, 316. LITERATURE WORKSHOP. 3 cr. each
Study of specific literary works or authors.

401, 402, SURVEY OF SPANISH LITERATURE. 3 cr. each

420. EL QUIJOTE. 3 cr.

440. DIRECTED READINGS. Var. cr.
Reading of literary texts under close faculty supervision, for majors only, and only with permission of the Department.

451, 452. GENERAL SURVEY OF SPANISH CULTURE AND HISTORY. 3 cr. each

453. SURVEY OF LATIN AMERICAN CULTURE AND HISTORY. 3 cr.

454. TRENDS IN LATIN AMERICAN LITERATURE. 3 cr.

461, 462. SENIOR UNDERGRADUATE SEMINAR. 3 cr. each
Twentieth Century Spanish literature and Twentieth Century Spanish-American literature.

DEPARTMENT OF PHILOSOPHY

Chairman: ANDRE SCHUWER, Ph.D.

The program offered by the Department of Philosophy is designed to be a basic part of the student's liberal education. It is intended to introduce students to philosophical thinking, past and present, to provide a discipline for asking the basic questions of life and to help students begin relating their other academic subjects to one another and to human experience. The department is made up of professors who have different philosophical interests, and it also respects the right of the student to decide for himself or herself on all issues. It believes that intellectual dialogue about basic human concerns will help the student be better prepared to meet the needs of mankind today and in the future. In order to make this kind of dialogue possible, the courses are concerned both with the past history of ideas and with the present problems of man's individual and social existence.

REQUIREMENTS FOR THE MAJOR

The department requires its majors to take nine philosophy courses above the 100 level of which at least three have to be at the 300 history of philosophy level and at least two other courses have to be at the 400 thematic level.

REQUIREMENTS FOR THE MINOR

Requirements for a minor are 104, 205; any three from among 201, 202,

300, 303, 304, 305, 323, 403; 400 level courses may be taken with permission of the department chairman.

Students who have questions about whether they are prepared well enough in philosophy to take an advanced course are encouraged to consult the professor who is scheduled to teach the course that particular term.

For the College philosophy requirement, a 100 level course must be taken before upper level courses.

INTRODUCTORY COURSES

104. INTRODUCTION TO PHILOSOPHY.

3 cr.

A first-hand study of selected philosophical texts from both traditional and existential perspectives with the aim of introducing students to the nature of philosophical thinking, and to the variety of philosophical issues, areas, methods, and theories.

105. ETHICS.

3 cr.

An introduction to ethical theories of past and present time. Contemporary moral issues will be considered in the light of these theories.

106. LOGIC.

3 cr.

An analysis of the formal relationships between propositions, including valid forms of argument. Also, a description of some important informal aspects of ordinary discourse, such as types of definitions and common fallacies of inference.

BASIC THEMATIC COURSES

201. PHILOSOPHY OF KNOWLEDGE.

3 cr.

Interrogation of the nature and experience of Truth, especially by way of the explorations of Aristotle, Thomas Aquinas, Hegel, Husserl and Heidegger. Distinction between philosophical and non-philosophical (scientific or theological) knowledge.

202. PHILOSOPHY OF BEING.

3 cr.

The approaches of philosophers such as Aristotle, Aquinas, Kant, Hegel and Heidegger. God, world and man. Being, essence and existence. Time and history. Being and the possibility of metaphysics in contemporary thought.

203. PHILOSOPHY OF RELIGION.

3 cr.

An introduction to the distinctive nature of religious symbolism as an autonomous mode of experience, thought, discourse and activity. Special attention to such questions as: the nature and grounds of religious affirmation (as distinct from scientific, artistic and philosophical affirmation); the relation of the God of religion to the God of philosophy; the religious significance of history, evil, creativity and ethics. Assigned readings include both traditional and contemporary writers.

204. PHILOSOPHY AND LITERATURE.

3 cr.

A study of selected works of authors such as Sophocles, Chekhov, Dostoevsky, Rilke, Nietzsche, D. H. Lawrence, Ibsen, Edward Albee, O'Neill, and Samuel Beckett. This study will respect the integrity of the works as artistic creations, enable the students, through class discussions, to create a shared experience of the works and proceed to a philosophical discussion of the issues presented by the writer, his characters or the situation he creates.

205. EXISTENTIAL PHENOMENOLOGY.

3 cr.

Introduction to the methods, central commitments, and style of interrogation which characterize existential phenomenology. Lectures and discussion over texts by major thinkers, such as *Being and Time* by Heidegger, *Phenomenology of Perception* by Merleau-Ponty, and selected writings by Sartre.

206. PHILOSOPHY OF SOCIETY.

3 cr.

An examination of the question of social existence. This course will explore man as a social and political being. Relations between

the moral, the social, the political and the economical will be considered.

207. PHILOSOPHY OF SCIENCE. 3 cr.

A study of the philosophical implications of the methodology and conceptual framework of modern and contemporary science. Contrast between Newtonian and contemporary physics regarding such philosophical questions as the nature of matter, space-time, technique and technology.

208. MEANING OF CONTEMPORARY ATHEISM. 3 cr.

The meaning of Atheism as a contemporary phenomenon. Critical evaluation of some sociological and psychological theories of the origin of religion.

209. CONCENTRATED READINGS FOR NON-MAJORS. 3 cr.

Similar to, but more elementary than, 325.

210. PHILOSOPHY OF FEMININITY. 3 cr.

A philosophical study of "the second sex," emphasizing phenomenology as a method which attempts to be free from prejudice; includes a discussion of some contemporary ethical and legal issues concerning the equality of women. Designed especially for non-majors.

HISTORY OF PHILOSOPHY COURSES

300. ANCIENT PHILOSOPHY. 3 cr.

A study of the beginning of Philosophy in Greece, from the Presocratics to Plotinus with readings principally taken from Plato and Aristotle.

303. MEDIEVAL PHILOSOPHY. 3 cr.

An intensive philosophical study of some medieval texts in English translation, selected as representative of the broad range of issues, approaches and theories which characterize the major Christian, Jewish and Islamic philosophical thinking of the period. Some questions confronted are: the existence and nature of God; the nature of discourse about God; the relation between religious belief and philosophical reasoning; the nature of man.

304. MODERN PHILOSOPHY. 3 cr.

This course emphasizes the most basic philosophical problems of the period from Descartes to the end of the 19th century. Course work consists of an analysis of several important texts chosen from such philosophers as Descartes, Leibniz, Hume, Kant, Hegel, Marx, Kierkegaard and Nietzsche. There is an emphasis on the tension resulting from the clash between the emerging natural sciences on the one hand and classical metaphysics on the other. The emergence of the historical sense. These problems are debated and discussed, particularly with their ramifications for contemporary thought.

305. CONTEMPORARY PHILOSOPHY. 3 cr.

A study of contemporary philosophy from 1900 to the present, introducing the methods and history of selected twentieth-century movements with detailed attention to existential phenomenology.

322. SURVEY OF AMERICAN PHILOSOPHY. 3 cr.

From Puritanism to the Enlightenment, Transcendentalism, Pragmatism, with emphasis on key figures in American Philosophy, Pierce, Dewey, James, Royce, Santayana, Whitehead, etc.

323. ORIENTAL PHILOSOPHY. 3 cr.

Introduction to Oriental thought through study of its major structures in their historical setting, aiming at understanding its characteristic vision. Examination of perspectives presented by traditions such as Confucianism, Taoism, Buddhism, Hinduism and others.

325. CONCENTRATED PHILOSOPHICAL READINGS. 3 cr.

This course is an in-depth study of one or several philosophers such as Plato, Aristotle, Aquinas, Occam, Descartes, Kant, Wittgenstein, Strawson, Heidegger, etc., varying in subject matter from time to time.

ADVANCED THEMATIC COURSES

401, 402. THOMISM (BEING, KNOWLEDGE, MAN). 3 cr. each

A course dealing with the texts by St. Thomas

in ontology, epistemology and the philosophy of man. Neothomism (Maritain and Gilson) together with reference to Transcendental Thomism (Rahner, Lonergan, etc.).

403. PHILOSOPHY OF GOD. 3 cr.

Thematic course focusing especially on the experiential and conceptual relationships among the themes God, nature, freedom and morality.

406. AESTHETICS. 3 cr.

Theories of beauty and the sublime in the light of contemporary problems of human existence, with special attention to Plato, Aristotle, Kant, Nietzsche, Heidegger, Camus and van der Leeuw. Artistic creativity as an approach to life and as a possible foundation for philosophical thinking.

407. PHILOSOPHY OF LANGUAGE. 3 cr.

Introduction to the philosophy of language. Among the topics considered are the character and limits of formalistic approaches to language, the centrality of the speaking subject, relation of language to thought, language and linguistics, language and poetry, theories of structuralism.

408. FOUNDATION OF ETHICS. 3 cr.

A study of the philosophical foundations of Ethics. Foundational theories of Greek and Scholastic philosophy. Modern and contemporary ethical theories of foundation.

409. SYMBOLIC LOGIC. 3 cr.

An introduction to the methods of symbolic logic.

410. THE PHILOSOPHY OF KARL MARX. 3 cr.

Historical and dialectical materialism in the writings of Karl Marx, Friedrich Engels, the Soviet Philosophy and contemporary Marxism.

411. PHILOSOPHY OF HISTORY. 3 cr.

An analysis of linear and cyclical models of history in the light of the contemporary crisis of human existence with special attention to St. Augustine, Hegel, Marx, Nietzsche and the twentieth-century existentialism. The fundamental question of the course is how meaning can be found in historical experience.

412. SENIOR SEMINAR. 3 cr.

Devoted to a serious analysis of the major texts of one important figure in the history of philosophy.

413. SPECIAL TOPICS. 1-3 cr.

414. PHILOSOPHY OF MAN. 3 cr.

A reflective articulation of a conception of human existence, taking account in particular of the relations between man and nature, history, science, technology, society, religion. Concrete issues treated will be, for example: embodiment, intersubjectivity, finitude, theory and praxis, transcendence.

DEPARTMENT OF PHYSICS

Chairman: WALTER S. SKINNER, M.S.

The program in the Department of Physics aims at not only providing today's student with a fundamental background in physics and its interrelationships with other sciences and disciplines, but also providing a suitable flexibility of program which will best fit the graduate for the challenge of today. While the department is hopeful that each student majoring in Physics will continue his professional growth, it is also realized that professional growth is not confined to a single path. The undergraduate program, therefore, provides the essential background for success in graduate work, but also provides the student with fundamental qualifications which will equip him for an available position in a research institution, government agency, or private corporation.

REQUIREMENTS FOR THE MAJOR

A minimum of 32 semester hours is required for a major. These credits must include: 211, 212, 301, 329, 330, 361, 372, 402, 429, 430, 473, 474 (483, 484, or 485 may be substituted for 474 with departmental approval).

Extrdepartmental Requirements: Chemistry 121, 122 or Biology 111, 112; Mathematics 115, 116, 215, 216, 321, and two years of a modern language.

If a student takes 207, 208-Physics and the Modern World and either 201, 202-General Physics or 211, 212-General Analytical Physics, the credits for the 207, 208 will not apply to the total number required for the degree. Credit will not be given for both 201, 202 and 211, 212.

REQUIREMENTS FOR THE PHYSICS MINOR

The minor consists of eight hours in the General Analytical Physics (211, 212) and 12 credits of upper division physics on the 300 and above level. The department will structure the minor program from the course offerings to fit, as nearly as possible, the needs and desires of the individual student.

REQUIREMENTS FOR THE EARTH SCIENCE MINOR

The minor consists of a prerequisite sequence of 101 and 102, which must be taken as the first courses, and 12 credits chosen from 203, 204, 303, 304, 305 as available to the curriculum. Not all courses are taught each semester.

Earth Science 101 is prerequisite to all courses.

201,202. GENERAL

PHYSICS.

4 cr. each

Designed to give the student a basic knowledge and understanding of mechanics, properties of matter, heat, wave motion, sound, magnetism, electricity, light, and modern physics through the use of modern day examples and applications. At the completion of this course, the student should have attained a working knowledge of physics, its techniques and reasoning such that the knowledge of physics gained may be applied to future work in the sciences or other fields of endeavor. Prerequisite: Mathematics 103, 104 or the equivalent. Students who have completed Mathematics 116 and pre-engineering students should take 211, 212. Lecture, four hours; Laboratory, two hours.

course includes basic philosophical concepts in Physics which pervade all human discipline. Examples are taken from modern physics, relativity, elementary particles, quantum theory, statistics, etc. to cover model-making, dynamics, ensemble behavior, symmetry. No mathematics beyond elementary school level are required.

211, 212. GENERAL ANALYTICAL

PHYSICS.

4 cr. each

This is a general introduction to the basic physical theories and concepts. An attempt is made to develop in the science student the quantitative approach of the physicist to the physical universe. Some of the topics which may be included are vectors. Newton's Laws of Motion, the motion of a particle in space, momentum, energy, rigid body motion, fluids, gravity, wave motion, the first and second laws of thermodynamics, electricity and magnetism, optics. Corequisite for 211: Mathematics 116. Lecture, three hours; Laboratory, two hours.

207, 208. PHYSICS AND THE

MODERN WORLD.

3 cr. each

A course for nonscientists. A lecture course attempting to bridge the two-culture gap. This

301. THERMODYNAMICS.**3 cr.**

There is an intermediate level course covering the fundamental principles of thermodynamics, kinetic theory and statistical mechanics. The following is a partial list of items generally included: temperature, thermodynamic systems, work, heat, the first and second laws, ideal gases, entropy, Maxwell's equation, the kinetic theory of ideal gas, and the basic concept of statistical mechanics. Prerequisites: 212, Mathematics 215.

306. APPLIED ELECTRONICS**LABORATORY.****2 cr.**

This course seeks to combine a treatment of the principles of modern electronic instrumentation with practical laboratory experience. Topics which will be included are: passive and active electronic components, electronic measuring instruments, power supplies, amplification, feedback and control, impedance matching, linear and digital devices. Emphasis will be on proper use of instrumentation rather than on advanced principles of design. Prerequisite: Permission of instructor.

329. ADVANCED LABORATORY I.**1 cr.**

This course is concerned with electromagnetic phenomena and basics of modern electronics. A set of programmed experiments is performed and analyzed by the students. Subjects covered are: the use of electronic instruments, dynamics of electrons in electronic and magnetic fields, electric circuits. Prerequisite: 212 or 202 and consent of instructor.

330. ADVANCED LABORATORY II.**1 cr.**

A continuation of Advanced Laboratory I and includes the following items: basic semiconductor electronic devices, transistor amplifiers and oscillators, the klystron and microwave optics. Prerequisite: 329 or consent of instructor.

361. MECHANICS.**4 cr.**

An intermediate course in the application of Newtonian Mechanics to simple systems. A short introduction to Vector Calculus precedes the main discussion. The topics normally covered are dynamics of a mass point, systems of particles, generalized coordinates and

Lagrange's Equations. Other topics which may be included by the instructor are normal modes, rigid bodies, two bodies with a central force, and waves on a string. Prerequisites: 212, Mathematics 215.

372. ELECTROMAGNETISM.**4 cr.**

The following topics are usually discussed: electrostatics, energy relations in electrostatic fields, dielectrics, currents and their interaction, magnetic properties of matter, AC circuits, Maxwell's equations, reflection and refraction of electromagnetic waves, dipole and plane sheet radiation. Prerequisites: 212, Mathematics 215.

402. OPTICS.**3 cr.**

This course introduces the student to classical principles of geometrical and physical optics and shows how these are applied in the construction of optical instruments. Reflection, refraction, interference, diffraction, and polarization phenomena are treated, as well as an introduction to quantum optics. Prerequisite: 202 or 212, or consent of instructor.

429, 430. ADVANCED LABORATORY**III, IV.****1 cr. each**

Advanced Laboratory III is a *one-year* senior research project in which the student selects a project, develops it, and prepares a report. Topics are selected from those suggested by members of the Physics Department or associated departments, and the work is carried out in close coordination with the selected advisor. Work, however, must be the student's own. No grade is assigned for the first semester, and the grade for the course is assigned upon completion of the project.

473. ATOMIC PHYSICS.**3 cr.**

This course provides an introduction to special relativity and quantum theory with applications drawn mainly from modern theories of the atom. Topics usually included are quantum theory of heat radiation, the uncertainty principle, quantum theory of the hydrogen atom, many-electron atoms, atomic spectroscopy. Prerequisites: 212 and consent of instructor.

474. QUANTUM MECHANICS.**3 cr.**

A basic introduction to the dynamics of

quantum phenomena. Some of the topics covered are Schroedinger Equation, oscillators, hydrogen atom, linear operators. Hermitian Matrices, observables, conservation theorem, spin, angular momentum and perturbation theory. The course will emphasize application to simple system. Prerequisites: 212; Mathematics 215.

483, 484, 485, 486. SPECIAL TOPICS. 1-3 cr. each
Designed to allow the Physics major flexibility in scheduling, this course may include the following:

483. NUCLEAR PHYSICS. 3 cr.
Many of the experimental and theoretical aspects of the atomic nucleus are discussed. Some of the usual topics are: two-nucleon systems, radioactivity, (alpha, beta and gamma decay), radiometric dating, interaction of radiation with matter, nuclear structure, nuclear reactions, and nuclear fission. Prerequisite: 202 or 212.

484. INTRODUCTORY SOLID STATE PHYSICS. 3 cr.
Bulk properties of materials are discussed from both the phenomenological and microscopic approaches. Typical topics are the geometric structure of solids, waves and diffractions, thermal properties, the free electron model, band theory, superconductivity, magnetic properties and magnetic resonance. Prerequisites: 212 and consent of instructor.

485. RELATIVISTIC MECHANICS. 3 cr.
This course is an introduction to the Special and General Theories of Relativity. A list of topics which may be discussed are absolute space, Einsteinian Kinematics, Einsteinian Optics, spacetime and four-vectors, relativistic particle mechanics. Prerequisites: 212; Mathematics 215.

486. SHOP TECHNIQUES. 1 cr.
A basic introduction to machine shop practices necessary to experimentalists in all fields. Some of the areas covered are: shop equipment and its use, materials, soldering and welding techniques, mechanical drawing and schematics, electronics construction techniques and practical application.

487. PROBLEMS IN PHYSICS 1-4 cr.
Special topics and problems in physics and related subjects suitable for independent work.

Earth Science
101. PHYSICAL GEOLOGY. 3 cr.
(Prerequisite to all Earth Science courses.)
This introduction to the geological processes and materials will concentrate on the makeup of our planet and the materials involved. Study will also include physical features and the processes of the earth, as presently understood, which have created those features. Geological relation to environment is also examined.

102. HISTORICAL GEOLOGY. 3 cr.
A study of the earth's history which relates tectonic movements of the crust. Mountain building processes and life history with their interrelations will be discussed. Evolution of local features will be discussed also.

103. PHYSICAL GEOLOGY LABORATORY. 1 cr.
An introduction to the identification of rocks and minerals by composition and appearance and the interpretation of topographic maps. The use of maps to identify the causes of drainage and some effects of water and erosion will be experienced. Mapping tools will be introduced, as will some field equipment.

104. HISTORICAL GEOLOGY LABORATORY. 1 cr.
An accompaniment for ES 102, providing an introduction to sedimentation and the use of fossil identification. Columnar sections, Aerial Geologic maps, and Aerial Photos will be used.

203. ASTRONOMY. 3 cr.
Introduction to the study of astronomy and the basics of observation. Study will include telescopic types and the known universe as identified from present study. Course will, *if possible*, include arrangements with Buhl Planetarium and Allegheny Observatory. Star types and distances will also be examined.

204. METEOROLOGY. 3 cr.
Elementary study of meteorology and weather systems in the local area as well as the world

patterns. A weather station has been installed on Mellon Hall, and observation and prediction will be practiced. Local and U.S. Weather Bureau services will be used and analyzed when possible.

303. OCEANOGRAPHY. 3 cr.

An introduction to the marine environment including the geology and ecology. Attention is paid to the importance of dangers to the ecosystem. Characteristics of oceanic waters and circulation patterns will be discussed. Summer courses may be combined with one of several universities offering facilities.

304. ENVIRONMENTAL EARTH SCIENCE. 3 cr.

An examination of the problems of ecology and the impact of modern living on the systems of the earth which are necessary for plant and animal life. The individual effects of both

natural and man-made pollution and their results, as well as possible cures. An advance over 101, 102 with an effort to have the student gain a balanced, non-hysterical appreciation of cause, effect, and search for solution.

305. PHYSIOGRAPHY OF THE UNITED STATES. 3 cr.

Introduces the student to the various topographic and physiographic differences in the contiguous states as well as Alaska and Hawaii. This course is designed to allow the student to become familiar with the terrain, resources, economies, and individual problems of the various regions of our country. An approach to demonstrate the fact that no generalization may be made to fit all areas at once, but different problems are associated with each resource and each region.

DEPARTMENT OF POLITICAL SCIENCE

Chairman: A. KENNETH HESSELBERG, Ph.D.

Political science is concerned with developing the person. Through the study of the science of politics, the student will develop his analytical and intellectual skills. Political science graduates pursue careers in many diverse fields including governmental administration and service, teaching careers at various levels, law, and business.

REQUIREMENTS FOR THE MAJOR

Twenty-four semester hours are required for a major in political science in addition to 101; these credits must include 208, 309, and 405 or 406.

Political Science 101 is prerequisite to all courses.

REQUIREMENTS FOR THE MINOR

General Minor in Political Science. This minor is designed to provide the student with a comprehensive view of the entire discipline and is recommended for those students who may later contemplate graduate study or think that they might eventually like to change from a minor to a major in Political Science. It consists of a minimum of 13 credits beyond the freshman course, 101; the 13 credits encompass the following required courses: 208, 221, 222, 309, and 405 or 406.

The Concentrated Minor. Students wishing to concentrate in a particular area

of Political Science may elect the following minors:

1. *American Government*: 221, 222, and a minimum of eight credits from among: 231, 240, 241, 242, 276, 301, 302, and 407.
2. *Comparative Government*: 208 and a minimum of nine credits from among: 315, 316, 318, 321, 408, 412, and 413.
3. *International Relations*: 309 and a minimum of nine credits from among: 215, 312, 320, 402, and 409.
4. *Political Theory*: 405, 406, and a minimum of six credits from among: 306, 407, 410, and 420.

The Selective Minor. The Department of Political Science will also devise a minor from its course offerings to fulfill the particular needs and desires of a student in any major area of concentration. Such a minor must be structured in consultation with the student's faculty adviser and the department chairman.

101. INTRODUCTION TO POLITICAL SCIENCE.

3 cr.

(Prerequisite to all courses.)

An investigation of the most fundamental concepts involved in the study of political society.

208. COMPARATIVE POLITICAL SYSTEMS.

3 cr.

A systematic, multifocused analysis of selected political systems.

215. NATIONAL STRATEGY.

3 cr.

A study of the elements that constitute the strategic environment and the forces that affect the application of these elements in the formulation and determination of national security strategy.

221, 222. AMERICAN FEDERAL GOVERNMENT.

2 cr. each

An intensive analytical description and evaluation of the American Constitutional system with emphasis upon the basic institutions of government.

231. CONSTITUTIONAL LAW.

3 cr.

An intensive investigation of the role of the Supreme Court in the American system of government, concentrating upon the study of selected key court decisions. Prerequisites: 221, 222.

240. AMERICAN POLITICAL PARTIES.

3 cr.

An intensive study of the roles of interest groups and political parties in the decision-making processes of the American system of government with attention devoted to the internal dynamics of these institutions.

241. THE AMERICAN PRESIDENCY.

3 cr.

A study of the role of the President at the center of the decision-making process in the American political system.

242. THE AMERICAN CONGRESS.

3 cr.

An investigation of the operation of the Congress of the United States within the American system of government.

276. VOTING AND ELECTION BEHAVIOR.

3 cr.

An examination of the determinants of opinions and political beliefs, political participation, and voting behavior; the significance for democratic government of findings in these areas. For majors only.

301. STATE AND LOCAL GOVERNMENT.

2 cr.

A study of the position of the state and local governments in the Federal Union.

- 302. MUNICIPAL GOVERNMENT.** 2 cr.
A study of the role of local government in the state and federal systems.
- 306. COMPARATIVE COMMUNIST POLITICAL SYSTEMS.** 3 cr.
A comparative analysis of the political systems existing in the Soviet Union, Communist China, and Yugoslavia.
- 309. INTERNATIONAL RELATIONS.** 3 cr.
A study of the major factors involved in international relations including such concepts as sovereignty, nationalism, balance of power, and international law and organization.
- 312. INTERNATIONAL LAW AND ORGANIZATION.** 3 cr.
A survey of the historical development and present role played by international law in the world community and the formation and operation of such organizations as the United Nations and its specialized agencies.
- 315. POLITICS OF THE EMERGING NATIONS.** 3 cr.
A topical study of the politics of the emerging nations including nationalism, political integration, political parties, and the role of the military and elite.
- 316. POLITICS OF AFRICA.** 2 cr.
A study of the principal theories and issues in the politics of sub-Sahara and Africa.
- 318. NATIONALISM.** 3 cr.
A study of the dynamics of nationalism with emphasis on the role of nationalism in the developing nations.
- 320. UNITES STATES FOREIGN POLICY.** 3 cr.
A study of American foreign policy since the Second World War, with emphasis on the central present issues and the domestic sources of foreign policy.
- 321. GOVERNMENT AND POLITICS OF EASTERN EUROPE.** 3 cr.
An analysis of political developments in the communist regimes of Eastern Europe with special emphasis on relations between the USSR and Eastern Europe in the post-Stalinist era.
- 325. JUNIORS HONOR SEMINAR.** 2 cr.
Intensive study of selected topics in Political Science. Admission by invitation of the Department.
- 402. SOVIET FOREIGN POLICY.** 3 cr.
An analytical study of the development of Soviet foreign relations since 1917, with special emphasis upon the post-Stalinist era.
- 403. AMERICAN POLITICAL SYSTEM.** 3 cr.
Case studies in the American Political System—an intensive investigation of selected problem areas in the American System of government.
- 404. SIMULATION IN INTERNATIONAL POLITICS.** 3 cr.
Students spend the semester simulating an international conflict situation. They act as foreign policy decision-makers, applying the principles, concepts, and instruments of international politics. For majors only.
- 405, 406. WESTERN POLITICAL THOUGHT.** 3 cr. each
A study of political ideas as distinct from and yet related to political institutions which constitute our perennial western political heritage.
- 407. AMERICAN POLITICAL THOUGHT.** 3 cr.
An analysis of the issues which have played a fundamental role in American Politics, from colonial church-state problems, to modern liberalism and conservatism.
- 408. THEORY OF COMPARATIVE GOVERNMENT.** 3 cr.
An examination of the basic theories and concepts in contemporary approaches to comparative political systems.
- 409. THEORY OF INTERNATIONAL RELATIONS.** 3 cr.
A study of various theoretical approaches to an understanding of international relations including political realism, systems analysis, decision-making, and equilibrium analysis.
- 410. ORIENTAL POLITICAL THOUGHT.** 3 cr.
This course purports to explore the cultural heritages of China and India insofar as, and to

the extent that, they reveal themselves either directly or indirectly in expressions of political thought.

**412. GOVERNMENT AND POLITICS
OF GERMANY. 3 cr.**

A study of the government systems of Germany in their historical and ideological development.

**413. GOVERNMENT AND POLITICS
OF THE USSR. 3 cr.**

An intensive analysis of the origin and evolution of the Soviet political system, with particular emphasis upon the developments of the post-Stalinist era.

**420. CONTEMPORARY POLITICAL
THEORY. 3 cr.**

A study of central topics in political thought from Marx to the present time.

**430. INTERNSHIP IN PRACTICAL
POLITICS. 3 cr.**

A work and observation experience in government and political offices at the city, county, state, and national levels in the Pittsburgh area.

**436. SENIOR HONORS
COLLOQUIUM. 3 cr.**

DEPARTMENT OF PSYCHOLOGY

Chairman: REV. DAVID L. SMITH, C.S.Sp., Ph.D.

The undergraduate program of the Department of Psychology is designed: (a) to introduce and familiarize students with the fundamental content, issues, and interests of various areas of psychology and critically evaluate and reformulate these in the context of psychology as a human science; (b) to foster intellectual and personal freedom and critical thinking as essential to the humanizing process; (c) to prepare the professionally oriented student for advanced study; (d) to provide a foundation for careers involving human services. To these ends, the department offers a wide variety of courses covering psychology conceived as a human science, a natural science, and within a historical perspective. Further study in graduate school prepares students for careers in mental hospitals, schools, mental health and social welfare agencies, business and industry. In our rapidly changing society the demand for professionally trained psychologists is increasing.

While the department believes that human scientific psychology is the most viable and encompassing approach to the study of man, it also realizes its responsibility to expose its students to other psychological approaches. Hence, every major who plans to enter graduate school in psychology is strongly encouraged to take advantage of the offerings in sister universities through the procedure of cross-registration.

REQUIREMENTS FOR THE MAJOR

The major program consists of 103-Introduction to Psychology plus a minimum of 24 semester hours. These credits must include 220 and 223. Majors desiring to pursue graduate study in psychology are strongly advised to take six additional credits through cross-registration at other universities (Learning Theory, Experimental, Perception, Memory, etc.), and 225

Statistics in the Mathematics Department, which may also be considered a part of the mathematics/science requirement. Finally, it is recommended that majors enroll in a hospital or community practicum for credit, and/or do volunteer work in a neighborhood clinic. The three credits earned in practicum count toward the 24 required credits; an additional three credits in practicum may be earned above and beyond the required minimum of 24. Information about such opportunities can be obtained from the department course advisor.

The psychology department has set up a dual advisement system: the course advisor and the faculty advisor. Prospective majors should consult the Department Course Advisor concerning the special procedure followed for the declaration of the major.

A minimum of 15 credits in psychology must be taken at Duquesne University for the major.

REQUIREMENTS FOR THE MINOR

Requirements for a minor are 103 and 223 and any three of the following: 225, 280, 328, 340, 352, 361, 390, plus 400 level courses with permission of the department head. A minimum of nine credits in psychology must be taken at Duquesne University for the minor.

103. INTRODUCTION TO PSYCHOLOGY.

3 cr.

(Prerequisite to all courses).

Introduction to fundamental concepts and methods of psychology, examined from both traditional and phenomenological perspectives. Prerequisite for all other departmental courses.

220. SYSTEMATIC PSYCHOLOGY.

3 cr.

For majors only. Traditional approaches (behavioristic, physiological, psychoanalytic) to sensation, perception, learning, and motivation. Required for majors.

223. INTRODUCTION TO EXISTENTIAL PHENOMENOLOGICAL PSYCHOLOGY.

3 cr.

Introduction to a human-science alternative to psychology as a natural science. Prerequisite for 356 and 410; required for majors and minors.

225. DEVELOPMENTAL PSYCHOLOGY I (INFANCY AND CHILDHOOD).

3 cr.

Growth and development of the child, with emphasis on personality development.

226. DEVELOPMENTAL PSYCHOLOGY II (ADOLESCENCE AND MATURITY).

3 cr.

Development from adolescence, through adult stages, to coping with death.

227. HUMAN DEVELOPMENT.

3 cr.

Basic principles of human development over the life span. (Restricted to Education and Nursing students.)

230. PSYCHOLOGY OF COMMUNITY EXPERIENCE.

3 cr.

Experience of community phenomena, e.g., individual versus group priorities, intimacy vs. privacy.

280. HISTORY OF PSYCHOLOGY I.

3 cr.

Overview of figures and issues in the history of psychology, from precursors to present.

328. PSYCHOLOGY OF PERSONALITY.

3 cr.

Critical examination of major theories of personality.

340. SOCIAL PSYCHOLOGY.

3 cr.

Foundations of social processes, attitudes, values and roles, public opinion, propaganda and communication, personal participation in society.

352. ABNORMAL PSYCHOLOGY.

3 cr.

Examination of theories and data on disordered human existence.

356. RESEARCH PSYCHOLOGY:

THEORY AND PRACTICE. 3 cr.

Review of theory and practice of traditional and human-science research. Includes student projects. Prerequisite: 220, 223; permission of department head for non-majors.

361. PSYCHOLOGY OF IDENTITY

AND FULFILLMENT. 3 cr.

The ways in which identity is lived individually and collectively. Designed to be personally relevant to the life of the student. Open to juniors and seniors only.

370. PSYCHOLOGY OF AESTHETIC

EXPERIENCE. 3 cr.

Theoretical and empirical explorations of aesthetic experience.

390. HISTORY OF PSYCHOLOGY II. 3 cr.

Intensive study of selected historical figures, in dialogue with contemporary themes. Reading of primary sources. Prerequisite: 280.

391. APPLIED PSYCHOLOGY

PRACTICUM. 3-6 cr.

An applied psychology setting provides opportunity for working directly with professionals. Settings have included psychiatric hospitals and community centers. Majors only; permission of department head. Repeatable once.

392. THE INDIVIDUAL AND

HIS WORLD. 3 cr.

Examination of individual's relation to society, from a developmental and cross-cultural perspective.

393. PRINCIPLES OF PSYCHOANALYTIC

THOUGHT. 3 cr.

Examination of the times and contributions of Freud and selected other major psychoanalytic theorists. Permission of department head for non-majors.

394. PSYCHOLOGY OF LANGUAGE

AND EXPRESSION. 3 cr.

Communication as a live, embodied relation of person to world and others. Emphasis is on phenomenological theorists. Permission of department head for non-majors.

410. ADVANCED EXISTENTIAL-

PHENOMENOLOGICAL PSYCHOLOGY. 3 cr.

Detailed investigation of selected works in existential-phenomenological philosophy and psychology. Prerequisite 223. Permission of department head for non-majors.

432. GESTALT PSYCHOLOGY. 3 cr.

Contributions of Gestalt psychology (especially the works of Kofka, Kohler, and Goldstein) to traditional and human-science psychology. Permission of department head for non-majors.

450. CONTEMPORARY ISSUES IN

CLINICAL PSYCHOLOGY. 3 cr.

A human-science examination of the approach, methods, data, and current issues of clinical psychology. Permission of department head for non-majors.

457. INDEPENDENT STUDIES. 3 cr.

A tutorial course for an exceptional student who wishes to pursue a particular study with a faculty member. For majors only; usually those intending graduate study; advanced coursework completed. Permission of faculty member and department head required.

490. SPECIAL TOPIC. 1-4 cr.

A visiting professor presents his/her speciality, or a regular faculty member presents highly specialized studies or an experimental course. Repeatable. Prerequisites vary with the instructor. Permission of department head for non-majors.

DEPARTMENT OF SOCIOLOGY

Chairman: CHESTER A. JURCZAK, Ph.D.

Undergraduate instruction in sociology contributes to the liberal education of

students regardless of major and to the preprofessional training leading to graduate work in sociology and social work, urban affairs, urban planning, and criminology. Helping students in practical ways to live effectively and to become effective in practical attacks on social problems is another objective of the department.

Sociology studies all of this formally in courses designed to give students a sense of direction, a selective taste of materials and methods, and motivation so that they can devote some of their energies to independent observation and experimentation, and develop their own concepts about how society functions.

REQUIREMENTS FOR THE MAJOR

A minimum of 24 semester hours, not including 101 are required for a major in Sociology; these credits must include 201 and 304; in addition, 210 and 314 are strongly recommended.

REQUIREMENTS FOR THE MINOR

A minimum of 12 semester hours, not including 101, are required for a minor; 450, 451, 488, and 492 are reserved for majors only.

Sociology 101 is a prerequisite to all courses except 102 and 203; 102 can be substituted for 101 as a prerequisite for 211 and 306. All 300 and 400 courses are for juniors and seniors only.

101. SURVEY OF SOCIOLOGY. 3 cr.

A broad survey of the social and cultural aspects of environment.

102. SURVEY OF ANTHROPOLOGY. 3 cr.

An introduction to the field of Anthropology, both physical and cultural.

195. MILITARY IN SOCIETY. 3 cr.

A study of the organizational setting, the social processes and recent fundamental changes of the American military.

201. SOCIOLOGICAL THEORIES. 3 cr.

A study of selected European and American theorists. For sociology majors and minors only.

202. SOCIOLOGY OF SOCIAL PROBLEMS. 3 cr.

Study of person-structure-change framework applicable to contemporary social issues.

203. SURVEY OF SOCIAL WORK. 3 cr.

Survey of the history and areas of social

work-casework, group work and community organization; public and private welfare programs.

205. PERSON AND SOCIETY. 3 cr.

An exploration of socialization, person's interaction with structure and culture, small groups and collective behavior.

208. BLACK GHETTO. 3 cr.

Study of the structure, problems, and changes in the American Black Ghetto.

211. COMPARATIVE CULTURES. 3 cr.

A study of selected world cultures focusing on their structures, functions, and normative systems.

212. PROCESS I: SOCIAL WORK THEORIES. 3 cr.

Discussion of theory for social work practice; its social, psychological, and process bases.

304. METHODS IN SOCIOLOGY. 3 cr.

Discussion and application of techniques and research procedures used in sociological research.

- 306. PERSONALITY AND CULTURE.** 3 cr.
A cross-cultural examination of human social systems in terms of their relevance to personality development and interaction.
- 308. ETHNIC GROUPS.** 3 cr.
A comprehensive survey of roles performed and problems faced by ethnic groups.
- 309. WOMEN IN SOCIETY.** 3 cr.
The role of women in culture, and the study of women's movements for liberation.
- 312. SOCIOLOGY OF SPORTS.** 3 cr.
Study of the institutions of sports and their relation to American culture and other institutions.
- 313. SOCIOLOGY OF SEXUAL BEHAVIOR** 3 cr.
Discussion of sociological studies of sexual behavior.
- 314. SOCIAL WORK METHODS.** 3 cr.
Study of case study, study-diagnosis-therapy process, interviewing-counseling, and program planning. Prerequisite: Sociology 203. For sociology majors and minors only.
- 315. SOCIAL DEVELOPMENT—INFANCY TO DEATH.** 3 cr.
Study of the socializing process from the infant state to the dying state.
- 316. THE HELPING PROCESS: AN INTRODUCTION.** 3 cr.
Discussion of the social process of helping others, ranging from the consideration of the professional, the population a person serves and the dynamics of the interaction. The perspective is personal-social.
- 317. AGED AND SOCIAL SERVICE.** 3 cr.
A study of problems associated with the elderly and the social services developed to assist them.
- 325. FAMILY SYSTEMS.** 3 cr.
Comparative study of the family; the interaction of the family with other community institutions.
- 326. URBAN SOCIETY AND ECOLOGY.** 3 cr.
Analysis of the metropolitan complex of central city, suburbs, and urban fringe, and its impact on structure within its environs.
- 329. RELIGION IN AMERICAN SOCIETY.** 3 cr.
An analysis of American religious groups as social phenomena.
- 334. DELINQUENCY.** 3 cr.
A study of the phenomenon, theories and causation of juvenile delinquency.
- 335. CRIMINOLOGY.** 3 cr.
A study of sociological explanation of criminality; correlates, causation and criminogenic conditions.
- 340. AFRO-AMERICAN MINORITY.** 3 cr.
Concentration on the structure and culture of the Afro-American group with its attendant problems.
- 410. SOCIOLOGY OF AGING.** 3 cr.
Discussion of the socialization, role, subcultural and problem aspects of aging.
- 411. AGING AND HEALTH.** 3 cr.
Discussion of medical aspects of aging, diseases of aging and health maintenance.
- 444. SOCIAL LEGISLATION—SOCIAL SECURITY PRESENT DAY.** 3 cr.
Study of the provisions of social legislation applicable to client needs in a social work situation.
- 445. COMMUNITY AGENCY RESOURCES AND REFERRAL.** 1 cr.
Study of the various agencies which have been established to provide for needs of social work clients.
- 446. PROCESS II: CASEWORK.** 3 cr.
Study of casework as a social work process.
- 447. PROCESS III: GROUP WORK AND COMMUNITY ORGANIZATION.** 3 cr.
Examination of group processes and community organization strategies utilized in social work.

- 450. FIELD WORK I.** 3-6 cr.
Internship in a social work agency. For majors only; prerequisites 203 and 314.
- 451. FIELD WORK II.** 3-6 cr.
Internship in a social work agency. For majors only; prerequisites 203 and 314.
- 460. POLICY RESEARCH.** 3 cr.
Study of public policy in providing for the needs of the criminal justice system.
- 461. PROCESSING JUVENILE OFFENDERS.** 3 cr.
Study of the movement of juvenile offenders through the criminal justice system—police, prosecution, courts, and corrections.
- 463. PROCESSING ADULT OFFENDERS.** 3 cr.
Study of the movement of adult offenders through the criminal justice system.
- 464. POLICE COMMUNITY RELATIONS.** 3 cr.
Discussion of the context of police—community relations; their interaction, improvement, and change strategies.
- 465. CRITICAL ISSUES IN LAW ENFORCEMENT (POLICE).** 3 cr.
Analysis of police in a free society; ethnic tension, police discretion, civil disobedience, police conduct, and integrity.
- 466. CRIME PREVENTION.** 3 cr.
Study of contemporary crime prevention programs involving criminal justice agencies, citizens, and community politics.
- 467. CORRECTIONAL CASEWORK AND COUNSELING.** 3 cr.
Study of the counseling styles and individualized models for offender classification, and group and process models of counseling.
- 480. SOCIOLOGICAL MEASUREMENT.** 3 cr.
Discussion of techniques and problems in sociological measurement.
- 484. EVALUATIVE RESEARCH IN CORRECTION.** 3 cr.
Study of techniques for using research to make corrections more effective.
- 488. FIELD RESEARCH.** 3 cr.
Sociological research emphasizing the survey technique. For majors only.
- 492. SELECTED READINGS.** 1-3 cr.
For sociology majors only.

DEPARTMENT OF SPEECH COMMUNICATION AND THEATRE

Chairman: EVA C. ROBOTTI, M.A.

The program provides training essential to the several areas of speech communication. The department offers both its majors and interested students from other fields the opportunity to choose courses from a particular area of concentration or the whole range of the discipline.

AREAS OF CONCENTRATION

Social Communication. This focuses on the theories and techniques of human communication on both the personal and societal levels. The student of social communication examines the concepts and procedures which govern men's interactions as individuals and as parts of the mass. He also learns the practical arts of critical analysis and persuasive communication.

This training is excellent preparation for careers in law, government,

administration, personnel, public relations, industrial communications, advertising, sales, social work, and all fields which involve human symbolic interaction.

Recommended courses: 101, 102, 204, 206, 300, 304, 311, 406, 421.

Theatre/Media. The Theatre/Media concentration prepares the student for the fields of applied communication: theatre, radio-television, and public relations. Along with classroom theory, students will have opportunity to obtain practical experience onstage and backstage in Red Masquer productions, and by on-and-off-the air work at WDUQ (90.5 FM), Duquesne's twenty-five thousand watt National Public Radio affiliate. Ideally, the Theatre/Media student combines both activities.

Recommended courses: 190, 200, 201, 301, 305, 306, 307, 309, 310, 390, 405, 421.

Aesthetics of Communication. This is designed to introduce the student to the aesthetic values of the spoken language by providing courses which are related to speech as a presentational art. Among such offerings are courses which deal with the art of vocally projecting the experience of literature as manifested in works of great poetry and prose and courses in the vocal presentation of dramatic characters. One of the more singular department offerings is a course training the student in the art of orally presenting Biblical literature, considered by Duquesne to be a rare experience.

Recommended courses: 190, 201, 301, 307, 309, 310, 419, 421.

Speech Pathology. The profession of speech pathology and audiology is concerned with impairments in the processes of communication—speech, language, and hearing. Upon completion of graduate education, a speech pathologist or audiologist may provide clinical services or work in basic and applied research. He or she may be employed in schools, hospitals, laboratories, community service centers, or colleges and universities. Speech pathology and audiology is a rapidly growing field, and the demand for trained personnel far exceeds the supply.

This area of concentration at Duquesne is a pre-professional program designed to prepare the student for graduate study in speech pathology and audiology.

Required courses: 201, 203, 204, 303, 308, 409, 410, 420.

Co-requirements: Mathematics 225 and Psychology 226, 340 are recommended.

REQUIREMENTS FOR THE MAJOR

A minimum of 30 semester hours is required for a major in Speech Communication and Theatre. Majors will be required to enroll in three of the following four courses: 101, 102, 190, 201.

A maximum of 12 transfer credits in speech can be applied to the major requirements.

REQUIREMENTS FOR THE MINOR

The minor consists of 18 credits: six credits in required introductory courses and 12 additional credits. There are five emphases that the student may follow:

1. *Social Communication*: 101, 102, plus 12 credits in any of the following: 204, 206, 300, 304, 311, 406.
2. *Theatre/Media*: 190, 201, plus 12 credits in any of the following: 200, 305, 306, 307, 309, 310, 390, 405.
3. *Aesthetics of Communication*: 190, 201, plus 12 credits in any of the following: 301, 307, 309, 310, 419.
4. *Speech Pathology*: 201, 203, plus 12 additional credits. Courses 303 and 409 are required; the remaining six credits may be taken in any of the following: 308, 410, 420.
5. *General Speech Communication and Theatre*: 190 and either 101 or 102, with 12 additional credits apportioned in the following manner: six credits in any of the following: 204, 206, 300, 304, 311, 406; plus six credits in any of these: 200, 201, 301, 305, 306, 307, 310, 390, 405, 419.

Suggested activities for majors and minors in Speech Communication and Theatre include the Red Masquer Dramatic Organization, WDUQ Radio and Television, the Debate Team, the *Duke* (student newspaper), and United Nations Organization. Suggested courses for fulfilling Communication Area requirements for non-Speech majors: 101, 102, 190, 201.

101. PROCESS OF COMMUNICATION.

3 cr.

Provides an understanding of the nature of the communication process by examining man from the perspective of how he believes.

102. TECHNIQUES OF ORAL COMMUNICATION.

3 cr.

Develops those communicative skills necessary to critically analyze verbal discourse and to perform effectively in public speaking situations which confront the educated person.

190. INTRODUCTION TO THEATRE ARTS.

3 cr.

A survey of theatre as an art form, involving the selective integration of a number of skills and disciplines to bring about the aesthetic of the theatrical moment. Beginning with lectures on the roles of the director, actor, designer, and various craftsmen, the course will work up to a sampling of the various modes and forms of drama in terms of the exigencies of production.

200. RADIO AND TELEVISION ANNOUNCING.

3 cr.

The application of the principles of proper delivery to the field of oral reporting and continuity announcing, including enunciation, pacing, selective emphasis, tonal variance, the use of technical material, and an introduction to foreign language pronunciation. The facilities of WDUQ-FM and WDUQ-TV will be available for laboratory experience.

201. PHONETICS.

3 cr.

An approach to the English language based upon the fundamentals of vocal and articulatory speech sounds as systematized by the International Phonetic Association.

203. INTRODUCTION TO PROBLEMS IN SPEECH.

3 cr.

A survey of various speech disorders, their causes, recognition, and possible therapy.

204. INTERPERSONAL COMMUNICATION.

3 cr.

A course designed to investigate the various aspects of interpersonal communication. Primary consideration will be given face-to-face human interaction in a variety of situations.

206. DISCUSSION AND GROUP PROCESS.

3 cr.

Develops those communicative skills essential for functioning effectively in the small-group situation.

300. ARGUMENTATION AND DEBATE.

3 cr.

A course in applying the principles and methods of critical deliberation to a significant contemporary social issue. Emphasis will be on advocating, defending, and refuting a proposition of policy. Prerequisite: 102 or permission of the instructor.

301. ORAL COMMUNICATION OF LITERATURE.

3 cr.

An approach to literature in terms of its oral traditions with special emphasis on techniques preparatory to the act of oral presentation.

303. CLINICAL TECHNIQUES IN SPEECH PATHOLOGY.

3 cr.

This course will focus upon the clinical management of speech and hearing problems. Past and current therapeutic approaches and techniques will be presented in relation to disorders of speech and hearing. Different organizational procedures and practices will also be included. Prerequisite: 203 or permission of the instructor.

304. PERSUASION.

3 cr.

A study and application of principles and practices that influence people's beliefs and actions. Prerequisite: Either 101 or 102 or permission of the instructor.

305. DEVELOPMENT OF THE THEATRE I.

3 cr.

A study of the origin and development of theatre and drama from pre-Grecian civilizations to the seventeenth century, investigated in light of the particular world view which it expresses.

306. DEVELOPMENT OF THE THEATRE II.

3 cr.

A study of the development of theatre and drama from the seventeenth century to the early twentieth century, investigated in light of the particular world view which it expresses.

307. ACTING I.

3 cr.

A study of the basic principles, theories, and techniques of acting, including various problems confronted by the actor in the creation and interpretation of a role.

308. ANATOMY AND PHYSIOLOGY.

3 cr.

This course will study the basic neurological, skeletal, and muscular structures involved in the speech and hearing process. Prerequisite: 203 or permission of the instructor.

309. ADVANCED ORAL COMMUNICATION OF LITERATURE.

3 cr.

A continuation of 301, with special emphasis on techniques for the oral presentation of specific literary genres. Prerequisite: 301.

310. ACTING II.

3 cr.

An advanced course dealing with the principles and techniques of various acting styles with major concentration on the oral communication of a dramatic role. Prerequisite: 307 or permission of the instructor.

311. COMMUNICATION THEORIES.

3 cr.

Communication theories applied to contemporary systems of belief. Prerequisite: 101 or permission of the instructor; recommended: 304.

322. SPEECH PATHOLOGY EXTERNSHIP.

3 cr.

Provides opportunities for observation of various aspects of clinical work. Directed readings and field trips are included. For Speech Pathology concentration majors only. Written permission of department chairman required. Open to juniors only.

390. STAGE DIRECTING.

3 cr.

Studies principles, theories, and practices involved in the staging of a play for performance, emphasizing problems of staging and interpre-

tation confronting the director. Prerequisite: 190.

405. AMERICAN THEATRE AND DRAMA. 3 cr.

Survey of the major American theatrical movements and dramatic literature from the Colonial period to the present with emphasis on the twentieth century. Playwrights, designers, and theatrical companies are studied as reflections of American culture.

406. AMERICAN PUBLIC ADDRESS. 3 cr.

Examines the interrelated impact of verbal communication and significant political issues in American history.

409. HEARING AND AUDIOLOGY. 3 cr.

This course will consider the nature of sound, the process of hearing, and hearing impairment. The different types, causes, and the measurement of hearing impairment will be discussed. Exposure to audiometric testing will also be available. Prerequisite: 203 or permission of the instructor.

410. SPEECH PROBLEMS FOR THE CLASSROOM TEACHER. 3 cr.

This course focuses on the speech problems encountered in the classroom. Emphasis is placed on the recognition, and remediation of those speech problems. The classroom teacher will be exposed to the speech therapy program in the schools as well as to the teacher's role in

speech remediation in the classroom. Prerequisite: 203 or permission of the instructor.

419. ORAL COMMUNICATION OF BIBLICAL LITERATURE. 3 cr.

A course devoted to the consideration of the Bible in terms of the spoken language with its accompanying oral interpretative connotations and techniques. Prerequisite: 301 or permission of the instructor.

420. SPEECH PROBLEMS OF THE EXCEPTIONAL CHILD. 3 cr.

This course will investigate the speech and language development, speech problems, and speech remediation of the mentally retarded, brain injured, aphasic, learning disabled, and cerebral palsied child. The role of other professionals, in addition to that of the speech pathologist in speech remediation, will be explored. Prerequisite: 203 or permission of the instructor.

421. INDEPENDENT STUDY. 1-3 cr.

The student will work on a selected project under the supervision and guidance of a faculty member. Prerequisite: Permission of the instructor and the department chairman.

422. SPEECH PATHOLOGY CLINICAL PRACTICUM. 3 cr.

Provides an opportunity for active participation with professionals in their work in varied settings. For Speech Pathology concentration majors only. Written permission of department chairman required.

DEPARTMENT OF THEOLOGY

Chairman: REV. CHARLES J. FENNER, C.S.Sp., Ph.D.

Duquesne's Department of Theology affirms that the academic study of man's religious experience is essential to a complete education of man. The Department fulfills its role in theological studies by the pursuit of the following aims: 1) it emphasizes Catholic Theology, in brotherly dialogue with other Christian traditions, non-Christian traditions and Judaism, as the key element in Duquesne's commitment to Catholic education on the university level; 2) it acknowledges the fact of man's universal search for religious meaning and experience, and seeks not only to offer the possibility

of a study of the varying approaches to religious witnesses in history, but also to place Catholic Theology in communion with that quest; 3) it aspires to a fruitful encounter with other university disciplines, since the department is convinced that theology's concerns are related to all vital human issues, some of which other university disciplines explore.

Accordingly, the department has organized its courses into three divisions: Biblical Studies, Christian Studies, and Selected Religious Studies.

REQUIREMENTS FOR THE MAJOR

The major program consists of a minimum of 27 credits beyond the 100 level. These must include 201, 213, 214, 220, 498; the remaining credits will be chosen in consultation with the student's advisor.

REQUIREMENTS FOR THE MINOR

A minor consists of four courses beyond the 100 level. The department has also prepared suggested sequences which may be helpful to a student wishing to concentrate in a certain area of theology; e.g., Biblical Studies, Roman Catholic Theology, World Religions, Religion and Culture, Christianity in History, etc. These sequences are available in the department upon request.

COURSE INFORMATION

The numbering of the course indicates the level of approach.

- 100 These courses are of the basic, survey type, wherein emphasis is on breadth rather than on depth, and serve as background for other courses.
- 200-300 These courses treat of subject matter in a specific area of theology and in greater depth than in the 100 category.
- 400 Selected topics are dealt with at a more advanced level; independent research is required.

BIBLICAL STUDIES

114. INTERPRETING THE BIBLE.

3 cr.

A presentation of tools necessary to understand the Old and New Testament as ancient literary works, affording a unified view of historical events, as well as the prominent religious experiences reflected in these events; emphasis on practical interpretation of biblical passages with ample exercises provided.

213. SPECIAL INTRODUCTION TO THE OLD TESTAMENT.

3 cr.

A presentation of the Old Testament writings in their dynamic context of culture, politics, and geography, as well as an introduction to their literary modes, theologies, and themes, in-

cluding practical approaches to interpreting key passages of the Old Testament.

214. SPECIAL INTRODUCTION TO THE NEW TESTAMENT.

3 cr.

A presentation of the books of the New Testament from the point of view of their literary makeup, historical origins and testimony, and theological content; practical approaches in interpreting key passages of the New Testament.

313. ARCHAEOLOGY AND THE BIBLE.

3 cr.

An illumination through archaeology of the historical setting, the cultural background, and the events described in the Bible; a general

introduction to the techniques of archaeological investigation and a study of the principal archaeological sites in Palestine.

321. JESUS IN THE GOSPELS. 3 cr.

A portrait of the person of Jesus; elements of such a portrait drawn exclusively from an in-depth study of the four gospels, with ample usage of accepted scholarship on who does Jesus say He is and who do others say He is.

413. THEOLOGY OF THE OLD TESTAMENT. 3 cr.

An examination of the various books or blocks of writing in the Old Testament as to their theology; an attempt to draw together and present the major themes, motifs, and concepts of the Old Testament; a study of the relationship between the Old Testament and the New Testament.

414. THEOLOGY OF THE NEW TESTAMENT. 3 cr.

A presentation of the major theological traditions of the New Testament, emphasizing the diversity of Christian beliefs and practices, as well as the underlying unifying principles of the early Christian experience; an explanation of advanced techniques of biblical interpretation with opportunity for the student to practice such techniques.

490. FIELD EXPERIENCE IN BIBLICAL ARCHAEOLOGY. 6 cr.

Six weeks of supervised participation in an archaeological excavation in the Ancient Near East; experience in stratigraphic digging, pottery identification, scientific analysis of finds, and recording methods. Offered every two or three years; approval of participants by core staff required.

CHRISTIAN STUDIES

Christian Studies in General

140. CHRISTIAN UNDERSTANDING OF MAN. 3 cr.

An investigation into the question of "What does it mean to be human?", according to Judaeo-Christian teaching; a discussion of the relationship of the human person to self, others, the world, and the Divine as the basis

for humanness; a study of the issues involved in these four relationships, e.g., freedom, grace, contemplation.

260. ORIGINS OF PROTESTANTISM. 3 cr.

An introduction to the thought of the principal reformers: Luther, Calvin, Zwingli, Wesley; a study of speculative and practical forces operative in the fifteenth-sixteenth centuries which gave rise to the reforming movement; the formulation of Protestant Orthodoxy.

274. CHURCH HISTORY I. 3 cr.

A religious and historical exploration of the growth of Christianity from the first century up to the Reformation; discussion of those issues within the Church and the external forces which brought about major conflict and development.

275. CHURCH HISTORY II. 3 cr.

Selected topics in Catholic and Protestant development from 1500 to the present day; special emphasis on the crises, revolutions, and reforms that were central to this development.

351. SEXUALITY, SEX, AND MORALITY. 3 cr.

An analysis of the nature of sex and sexuality, according to the sources and developments of Christian thought; the integration of these concepts into a moral and ethical system; some modern reflections on Christian sexual morality.

352. VALUE OF HUMAN LIFE AND CURRENT ETHICAL PROBLEMS. 3 cr.

A discussion of the fundamental moral principles involved in making any of the "life decisions," the problem of the definition of life; a survey of the varied moral approaches to the issues of war and peace, capital punishment, abortion, birth control, euthanasia, genetic engineering, and the new embryology.

361. QUESTIONS IN PROTESTANT THEOLOGY. 3 cr.

An analysis of current issues in Protestant theology, e.g., the authority of Scripture, the mission of the Church, the relationship between the historical study of the gospels and dogmatic

Christology, the question of God-in-process, the Spirit and teaching authority.

370. EARLY CHRISTIAN THOUGHT. 3 cr.

A study of the early Christian thinkers with emphasis on the Apostolic Fathers, the Apologists, Origen, Athanasius, the Cappadocian Fathers, Tertullian, and Augustine as they interpret Christian revelation and lay ground for the systematic development of Catholic theology.

470. CHRISTIAN MYSTICISM. 3 cr.

A study of the manifold Christian experience of mysticism, i.e., experiential contact with God, as seen in famous exemplars of mystical experience: Jesus Christ, Paul, Ignatius of Antioch, Augustine, John Ruysbroeck, Catherine of Siena, Theresa of Avila, John of the Cross, Venerable Liberman, et al.

471. EASTERN CHRISTIAN THEOLOGY. 3 cr.

A study of the main theological developments in the Eastern Church from the Patristic age on through the medieval times until the modern days as they shape its distinctive spirit and mentality and as they are interpreted in the Eastern Orthodoxy.

Roman Catholic Theology

106. RATIONAL FOUNDATIONS OF THE CATHOLIC FAITH. 3 cr.

An investigation of the reasonableness of the Catholic Faith, beginning with an inquiry into the existence of God and the possibility of His intervention in human affairs; study of the Gospels as reliable documents, of Christ's claim to be God, His life, works, and especially His resurrection, of His founding of Church and its identity today.

201. INTRODUCTION TO THEOLOGY AND THEOLOGICAL METHOD. 3 cr.

An inquiry into, and an analysis of, the resources of theology: faith, revelation, inspiration, and Church teaching; a presentation of the various approaches to theological study and the schools of theological thought in Christianity.

202. CATHOLICISM. 3 cr.

An explanation of the major beliefs and practices of Roman Catholicism, including the nature and work of the God-Man as well as the privileges of Mary; study of the nature of the Church and its inerrancy in teaching; consideration of the norms of morality, the Commandments, the sacraments, and the spirit of Catholicism.

220. THE MYSTERY OF CHRIST. 3 cr.

A study of the person and meaning of Christ in historical and contemporary perspective; a discussion of the new bond between God and man and the new era in the spiritual destiny of mankind inaugurated by the Incarnation and the Passion-Death-Resurrection event.

230. THE CHURCH. 3 cr.

A study of the Christian community of believers in its origins, some of its major historical and dogmatic emphases, and its contemporary understanding of itself; the Church as a mystery, as Mystical Body, as People of God, as sacrament.

242. CONTEMPORARY THEOLOGICAL ISSUES. 3 cr.

An examination of theological developments in an era of renewal, reevaluation, and cooperation: e.g., belief and unbelief; Christian and secular humanism; the future with reference to hope, heaven, hell, afterlife, reincarnation, and resurrection; sin in a secular age; suffering and evil; the occult; the charismatic movement within the Church.

250. MORAL PERSPECTIVES IN HUMAN DEVELOPMENT. 3 cr.

A study of the basic issues involved in the formulation of moral values within the developing person, and of the sources upon which moral systems are based; a discussion of the absolute vs. the relative, traditional morality vs. "the new morality"; an application of these principles to a few modern problems, e.g., homosexuality, drugs, consumerism.

256. GOD AND HIS MEANING. 3 cr.

A theological understanding of the problem of God; a consideration of the responses of various

religions and philosophies to this problem; the origins and development of the theology of God in the Judaeo-Christian tradition with special focus on Catholic development.

301. MARRIAGE. 3 cr.

A personally-oriented and practical treatment of the marital union as seen in its Christian theological, psychological, and sexual aspects; a discussion of Christian marriage as a bond of love, as a sacrament, and as a way of human fulfillment.

330. THEOLOGY OF EVANGELIZATION. 3 cr.

A study of the missionary aspect of the Church, including the Church's missionary role in the liberation of all men; consideration from the Scriptures of the missionary activity of Christ and the Apostles; the problem of universality; evangelization versus catechesis; historical evolution of the Church's missionary activity; evangelization and culturization; evangelization and the disunity of Christianity.

331. THE CHURCH IN THE MODERN WORLD. 3 cr.

An analysis of the Church's role in the development of man today and in offering solutions to present problems of humanity in light of Vatican II's "Pastoral Constitution on the Church in the Modern World" and other related documents.

335. THEOLOGY OF THE SACRAMENTS. 3 cr.

A theologically practical treatment of the seven sacraments in relation to their significance for the Christian's daily spiritual growth and fulfillment; consideration of man's needs for ritual and symbol; discussion of recent revisions and developments in sacramental theology.

442. THEOLOGICAL ANTHROPOLOGY. 3 cr.

A study of man in his unique dignity as image of God and as responsible for the development of the universe; his experience of sin and alienation, and his liberation by divine grace given through his union with the Risen Christ.

475. THEOLOGY AND CATECHESIS. 3 cr.

An examination of the principal theological and pedagogical themes of modern religious education, and of the place of catechesis in the ministry of the Church; a presentation of the historical background of the contemporary catechetical renewal.

498. SEMINAR. 3 cr.

A critical analysis of selected topics in theology or of selected works by outstanding theologians; open only to juniors and seniors with a major or minor in theology.

SELECTED RELIGIOUS STUDIES

180. THE PHENOMENON OF RELIGIOUS EXPERIENCE. 3 cr.

An examination of the dimensions of mankind's religious experience, e.g., mystical, ritual, mythical, ethical, and scriptural; an analysis of the likenesses and differences of how the Divine is sensed and responded to in varied geographical, cultural, and chronological contexts.

241. STUDIES IN BLACK THEOLOGY. 3 cr.

A study of the literature and development of black theology as it has evolved in the United States, the Caribbean, and on the African continent, with special emphasis on the evolution in the United States; a discussion of the relationship of Christianity and other religions to the "black experience."

245. RELIGION AND CULTURE: SOME PERSONAL DIMENSIONS. 3 cr.

An explanation of the place of religion in the growth and fulfillment of modern man; of how religion influences the meaning of human existence in work, leisure, art, love, life, and death.

280. WORLD RELIGIONS. 3 cr.

A survey of the history, beliefs, practices, and contemporary influence of the major religions of the world: Hinduism, Buddhism, Confucianism, Taoism, Maoism, Shintoism, African traditions, Judaism, Christianity, and Islam; a discussion of a basic methodology for understanding religions.

283, 284. JEWISH THOUGHT**AND RELIGION.****3 cr. each**

A survey of the development of Jewish theological and ethical teachings as delineated in the Bible and the Talmud (Fall semester), and in medieval and modern Jewish thinkers (Spring semester); an analysis of the forces and events which helped to shape this development. 283 is *not* a prerequisite for 284.

342. RELIGION AND SOCIAL**ISSUES.****3 cr.**

A study of the influence of religious convictions in confronting major social issues of today's world, e.g., population growth, famine, ecology, liberation and revolution, truth as a social issue, wealth, taxation, and stewardship.

343. RELIGIOUS IMPACT OF**SECULAR THINKERS.****3 cr.**

A study of the effect that modern secular thinkers (e.g., Marcuse, McLuhan, Hefner, Toffler, Kohlberg, Skinner) have had on the religious consciousness and behavior of the present age; a discussion of certain areas of culture most affected by this secular impact.

345. WOMEN IN RELIGION.**3 cr.**

An examination of the theological position and social role of women in some of the major religions of the world: Hinduism, Islam, Judaism, and Christianity; a comparison of these religious roles to the cultural roles of women in society.

372. RELIGIOUS THEMES IN**LITERATURE.****3 cr.**

An exploration of the relationship between the imagination and the intellect, the artistic and

the scientific, in the expression of fundamental theological concepts in significant literary works — past and present, English and continental (in translation) — of Western man as they explicitly or implicitly express man in his relationship to himself, other men, and God.

373. RELIGION IN AMERICA.**3 cr.**

Analysis of the role of religion in the discovery, colonization, constitutional development, immigration trends, and growth of the American republic, with an emphasis on some uniquely American religious phenomena, e.g., religious liberty, indigenous American religious movements, civil religion, black religious experience.

481. ISLAM.**3 cr.**

An analysis of Islam as a religious, political, and cultural entity; Mohammad and the Arabian setting; history, beliefs, practices, and divisions within Islam; the Koran and Hadiths; the contemporary Muslim world.

482. RELIGIONS OF INDIA.**3 cr.**

An analysis of significant religious groups in India such as Jains, Buddhists, Parsees, Muslims, Sikhs, and Christians with emphasis on the Hindus; a study of the origin, development, beliefs, practices, and interrelationships among the religions and interaction between religion and Indian culture.

492. READING SEMINAR:**SELECTED TOPICS.****1-3 cr.**

A critical analysis of selected topics in the areas of biblical studies, Christian studies, Roman Catholic theology or selected religious studies, or of some outstanding authors and their works under the direction of a faculty member.



School of Business and Administration

HISTORY

The School of Business and Administration was established in 1913 as the School of Accounts and Finance. The rapid growth of the School necessitated a constant broadening of the curriculum until it covered all business subjects of fundamental importance. In 1931 it was designated the School of Business Administration and, with this change, definitely became a professional school of business administration. In 1971 the name was changed to the present designation to indicate broader preparation for activity in organizations of all types.

PHILOSOPHY AND OBJECTIVES

In accord with the educational philosophy and objectives of the University, the School of Business and Administration aims to assist the student in his development of the natural and supernatural virtues. The general aim is to provide through the media of instruction and related collegiate activity the facilitation of purposeful character, intellectual accomplishment, emotional and social maturity, and professional efficiency.

The School of Business and Administration has the professional responsibility of developing in the student such knowledge of business principles, procedures and problems as will enable him to become a self-sustaining member of the community, aware of his social and public responsibilities and dedicated to the enrichment of the resources for worthy living. It seeks to produce graduates who, upon entering their chosen careers, will be effectively prepared to discharge their obligations to God, to their community, and to themselves as intellectual and moral beings. The School attains this objective by guiding the student through a cultural core program, through a business core program, through an elective area of advanced business subjects chosen on the basis of professional interests, through co-curricular and extra-curricular activities, and through established personnel services.

As a division of the University, the School of Business and Administration is obviously dedicated to promoting those University aims and objectives contained in the general statement.

The professional objective of the School of Business and Administration is to produce graduates who have acquired and developed:

1. An appreciation of the importance of initiative and who consequently are willing to assume responsibility, work efficiently and harmoniously with others, and adjust to changing circumstances.
2. A respect for logical thinking and who strive energetically, therefore, to develop the capacities for analytical reasoning through the vigorous and orderly application of ethical and technical principles to problem solving.

3. An understanding of the personal and professional value of effective communications and a cultivation of their capacities for speaking and writing clearly and concisely.

4. An awareness of the important role of quantitative measurements in today's business and who have become skilled in the interpretation of mathematical, accounting and statistical data.

5. Sufficient knowledge in a professional area so that they can assume positions of responsibility with a background of learning-method and learning-impulse that will enable them to progress rapidly.

DEGREE

The School of Business and Administration grants the degree of Bachelor of Science in Business Administration. This degree may be awarded to those who satisfy the entrance requirements and complete successfully the School's degree program.

BUREAU OF RESEARCH AND COMMUNITY SERVICES

Activity complementing direct instruction takes place in five ancillary units grouped under the Bureau of Research and Community Services. All function to provide students and faculty with an opportunity for professional development as well as to provide services to the University and the community at large.

Bureau of Research

The Research Bureau carries out an independent research program, and cooperates with divisions of the School in facilitating the research of individual faculty members.

Through the University Press, the Bureau issues monographs and other publications. From time to time contract research is undertaken for business, community, and governmental agencies, insofar as this may fall within its academic aims of discovery and dissemination of knowledge.

The Bureau is a member of the Association for University Business and Economic Research, and maintains an interchange of publications with similar organizations in other universities throughout the country.

Center for Administration of Legal Systems

The Center serves as the focal point for research activity in the administration of law. Its approach encompasses the outlook and makes use of the investigative techniques of the physical scientist, the educator, the lawyer, the social scientist, the behavioral scientist, and the administrator. Present research activities include studies of the interactions of law and psychology, the administration and management of the courts, educational programs in fundamentals of the law for youth.

The Center also serves as the coordinating agency for education and training programs of a non-credit nature for persons currently employed within the legal system. Such programs are tailored to meet the needs of specific groups and agencies. The objectives, content, time and length of all

programs are cooperatively determined with the agency involved. The Center calls upon professionally trained practitioners from the local community as well as full-time faculty to instruct in these programs.

Center for Economic Education

The Center is charged with the responsibility of initiating and promoting economic education in the society at large. More specifically it develops and coordinates economic education within the Western Pennsylvania and Tri-State area where the primary thrust of the Center focuses on upgrading economic literacy and teaching competency in the school systems of the area.

Center for International Management

The objective of the Center is to develop a better understanding of the American involvement in international affairs and business and in management abroad through teaching and research; it is achieved by an interdisciplinary approach.

The areas of current research focus are:

1. Trade expansion between the USA and Eastern Europe.
2. Management in foreign nations.
3. Problems in international business.
4. International economic development with a stress on interaction among developed countries, and on the relationship developed countries—less developed countries.
5. International political and legal issues.

The Center has no teaching program of its own; most of its staff are faculty members from various schools and departments of the University or visiting foreign professors.

Center for Management Development

The Division conducts management training programs for industry ranging from the foreman level up through executive personnel, touching every phase of management to make the individual a better rounded person in meeting the current demands of business.

Also administered are non-credit programs which consist of courses in business and administration or special areas; these courses are offered for the continuing education of adults in the community.

STUDENT ORGANIZATIONS

These organizations, limited to students in the School of Business and Administration, exist for the promotion of the scholarly and professional interests of members:

The Zeta Chapter of Beta Gamma Sigma, national honorary fraternity for accredited schools of the American Assembly of Collegiate Schools of Business, is established at Duquesne University. Membership in this honorary fraternity is limited to juniors in the highest five per cent of their class and to seniors in the highest 10 per cent of their class.

The Beta Alpha Phi Fraternity is the honorary scholarship society of the school.

Phi Chi Theta is a national professional commerce sorority.

The Student Accounting Association provides for the interests of those who intend to become accountants.

American Marketing Association, the student chapter, affords membership to students whose major interests include salesmanship, marketing, advertising, transportation, or foreign trade. A selected group of seniors is permitted, under faculty supervision, to participate in the meetings of the Sales Executives Club of Pittsburgh and the senior chapter of the A.M.A.

Omicron Delta Epsilon, a national honor society in Economics, is open to all students specializing in studies in Economics. The society is open to those having an overall academic average of B in their Economics courses.

Delta Sigma Pi, a national professional business fraternity, is represented by *Theta Rho* chapter.

DIVISIONS AND PROGRAMS

The School of Business and Administration is comprised of three Divisions: Quantitative Science; Behavioral Science; and Economic Science.

A student entering the School of Business and Administration is expected to state to his advisor his career objective along with his academic area of concentration, the latter of which can be several of the junior and senior courses indicated in the three Divisions. The student's proposed curriculum must, of course, include the University requirements and Business Administration Core requirements as indicated in the illustrations set forth in this catalog. Consistent with his stated career objective and with the concurrence of his advisor, the student is free to select any junior and senior courses from the School of Business and Administration curriculum to complete the 15 hours required for graduation. The single exception to this is the student who selects Accounting as his area of concentration. The regulations for certification in Accounting make this program very rigid; this is dealt with in the paragraphs following the Sample Program.

The faculty advisor in the School of Business and Administration plays an extremely important role in the academic guidance of each student. Because of this, each student is permitted to select his own advisor based on personal knowledge and available biographical sketches.

FOUR YEAR SAMPLE PROGRAM

Freshman Year

Fall Semester		Spring Semester	
Courses	Credits	Courses	Credits
101 English Comp	3	102 English Comp	3
109 College Algebra.....	3	111 Calculus	3
*141 Economic Geography	3	142 Economic Devel.....	3
General elective	3	*181 Computer Science.....	3
General elective	3	General elective	3
	15		15

Sophomore Year			
211 Intro. Accounting	3	212 Intro. Accounting	3
221 Prin. of Economics	3	222 Prin. of Economics	3
281 Probability and Statistics	3	282 Probability and Statistics	3
*251 Legal Process	3	General elective	3
Theology or general elective	3	General elective	3
	15		15
Junior Year			
361 Prin. of Management	3	332 Money and Banking	3
371 Prin. of Marketing	3	321 or 322 Adv. Econ.	3
331 Business Finance	3	Business elective	3
311 Inter. Accounting or		Business elective	3
313 Managerial Accounting	3	General elective	3
381 Decision Making	3		
	15		15
Senior Year			
Business elective	3	Business elective	3
Business elective	3	Business elective	3
Business elective	3	Business elective	3
General elective	3	General elective	3
General elective	3	**Capstone course	3
	15		15

*Course may be taken in either semester.
**Executive Action Simulation or Executive Policy.

The accounting faculty recommends that students concentrating in accounting take Accounting 211, 212, 311, 312, 314, 315, 411, 412, 413, and 251-Legal Process, as well as at least one of the following: Law 353, 354, 355. It is recommended that the student achieve an overall B average in Accounting 211, 212 before attempting Accounting 311 and a minimum grade of C in both 311 and 312 before attempting the remaining 300 and 400 level courses.

Students enrolled in the accounting program are encouraged to take the A.I.C.P.A. Level II Achievement Test. This will normally be taken in the Spring Semester during which Accounting 315 will be completed.

Three credits in Theology are required for Catholic students. Others may take theology or may substitute three credits in the Department of History, Philosophy, Political Science, Psychology, or Sociology.

DIVISION OF QUANTITATIVE SCIENCE

Chairman: ROBERT G. BORMAN, M.B.A., C.P.A.

ACCOUNTING CURRICULUM

CPA REQUIREMENTS

Students who desire to become certified public accountants in Pennsylvania and who have been graduated from a four-year program in a college approved by the State Board of Education may sit for the CPA examinations. The degree program of the University is so approved.

Graduates may sit for the CPA examination in other states, among which are New Jersey and New York.

211, 212. INTRODUCTORY

ACCOUNTING.

3 cr. each

An introduction to the language of accounting, basic accounting concepts and brief exposure to recording financial information. An extensive study is made of accounting information for management decisions. Laboratory attendance to two hours a week is required.

311, 312. INTERMEDIATE

ACCOUNTING.

3 cr. each

This course is primarily concerned with an investigation and analysis of the accounting problems and practices of the corporation, with detailed study of the component elements of the balance sheet and income statement. Basic topics are: accepted and alternative methods in the accounting cycle; financial statements, their form, content and use; accounting problems of the corporation, detailed analysis of the balance sheet accounts, determination of net income; statement of source and uses of working capital. Prerequisites: 211, 212.

313. MANAGERIAL ACCOUNTING.

3 cr.

A study of the technique involved in the gathering, recording and interpretation of accounting and statistical data used in the solution of internal problems of management. Some of the topics covered are: construction, analysis and interpretation of reports; establishment of operating and financial standards; measurement of managerial performance; use of budgets in managerial control; use of cost data and interpretation of cost reports; use of

quantitative data in the formulation of policies; consideration of various aspects of Federal, State and local taxes and their effect on managerial decisions. Prerequisites: 211, 212.

314. ADVANCED ACCOUNTING.

3 cr.

This course applies fundamental theory to a number of important activities in business. Activities studied are: partnerships, special sales procedures, consolidations and fiduciaries. Prerequisites: 311, 312.

315. COST ACCOUNTING.

3 cr.

Basic cost accounting procedures are discussed from the following view points: cost principle, cost determination; cost control; cost analysis. Topics treated include cost terminology, planning and control techniques, and development and application of overhead rates. Cost behavior patterns are studied in conjunction with development and application of overhead rates. Standard costing, job order costing, process costing and joint products, by-product costing are treated in detail. Methods of judging managerial efficiency, inventory control and management control systems are also stressed. Prerequisites: 311, 312.

411. AUDITING.

3 cr.

Standards and procedures employed by auditors in the examination of financial statements for the purpose of rendering an opinion are studied and evaluated. Emphasis is placed on theory and philosophy of auditing; however, case problems are used to demonstrate the

application of the principles studied. Prerequisites: 312, 314.

412. INTRODUCTORY INCOME TAX

ACCOUNTING.

3 cr.

This course is a study of basic tax and procedure affecting primarily individuals and to a lesser extent partnerships and corporations. Principal topics: returns, rates, exemptions, income, deductions, sales and exchange of assets, and credits. Emphasis is placed on problems to demonstrate the application of the principles studied and use is made of official forms for demonstration purposes. Prerequisites: 312, 313.

413. BUSINESS INFORMATION

SYSTEMS.

3 cr.

A course designed to introduce students to management information processing systems

and the transformation of information systems to meet specific types of informational requirements. Topics include data base concepts, file storage considerations, development methodology, design, implementation and management considerations of business data systems. The course presumes a familiarity with basic computer programming as covered in the Analytic Methods sequence.

419. SEMINAR IN

ACCOUNTING.

3 cr.

This course is designed to develop a student's ability in technical expression, deepen his understanding of accounting theory, and acquaint him with contemporary accounting problems and literature. Students are made acquainted with the philosophy and methodology of research, and required to prepare a research paper. Prerequisite: 314.

FINANCE CURRICULUM

Students who desire to function in finance, either in the world of private business, government bodies, or in the area of securities are encouraged to select from the several groups of courses that place emphasis on specific material leading to that end. The professional designation of Chartered Financial Analyst (CFA) is used by those in the securities industry. The designation in the life insurance area for professional personnel is (CLU) or Chartered Life Underwriter. The completion of the Real Estate course and others will satisfy the educational requirements necessary to sit for the Pennsylvania Real Estate Salesman's License.

331. BUSINESS FINANCE.

3 cr.

The aim of this course is to combine the study of internal and external sources of funds with the tools of financial management in order to maximize the wealth of the business entity. Primary attention is given to private business entities. While many of the tools and instruments used in the demonstrations are those of large business concerns, entities of all sizes are covered. Special attention is given to the decision-making process as applied to the finance function of business. Secondary emphasis is given to the securities markets, financial projections, organizational form, mergers and consolidation, and reorganization. Prerequisites: Accounting 211, 212 or the equivalent.

332. MONEY AND BANKING.

3 cr.

To develop knowledge about the role of financial institutions in our society as they perform their function of either the creation of the medium of exchange or of taking existing funds from sources of excess to sources of supply. Further, to develop an understanding of the construction of the portfolios of the institutions in order to understand why each employs their available funds as they do; knowledge about interest rate movements and their affects on business and the development of financial instruments used within the business society. Also, through the media of a research paper, the student has the opportunity to develop a major area in detail. Emphasis is primarily on the role money and banking take in relationship to business entities. Prerequisite: 331.

333. FINANCIAL MANAGEMENT. 3 cr.

Financial Management is a "follow-up" course to 331-Business Finance. It is designed for all business students. The course is designed to provide a theoretical or conceptual framework that a financial manager can use to reach decisions in the real world. Material is presented with the purpose of involving the student in the fundamental decisions and compromises of the financial manager as he faces choices between risk and return. Reading material, case material, and a research project are tools to be used. Prerequisite: 331.

334. RISK MANAGEMENT. 3 cr.

A study of the broad spectrum of risk exposures in business enterprise, with special attention to the need for identifying these in terms of nature and magnitude. Emphasis is on techniques available to aid the decision-maker in making decisions under constraints of uncertainty. Methods of alleviation, avoidance, and insurance are studied. Attention is given not only to the traditional forms of insurable hazards, but also to implicit risks such as those of loss in market value of assets, capital budgeting decisions, new product financing techniques, mergers, and other areas where risk is present in the decision. Prerequisite: 331.

335. BUSINESS FINANCIAL PROBLEMS. 3 cr.

The aim of this course is to provide a vehicle which the student can take material from previous courses both of a financial nature and that from other disciplines and through its utilization solve problems primarily of a financial nature. It also provides the student with an opportunity to learn to write and deliver professional opinions on how to solve business problems. While the course is primarily taught through the case technique, other methods are also used. The student is expected to be able to identify problems, reach conclusions, recommend solutions, and identify techniques on how they might be implemented. Prerequisite: 331.

336. SECURITY ANALYSIS. 3 cr.

An intensive study of the analytic techniques applicable to the selection of the various securities of private as well as public entities. Consideration is given to the markets in which

these securities are traded and the types of information that are useful and necessary to the decision-making process of the investor as the attempt is made to measure the value of a particular security. Several models are examined in seeking their appropriateness in establishing the relative worth of a security. The merits of both the fundamental and technical approach to security analysis are considered for their contribution to the analysis of a security. Prerequisite: 331.

337. INVESTMENT ANALYSIS. 3 cr.

It is the aim of this course to present material that will be useful to the student in developing an understanding of the various types of investments which may be available for a portfolio investment. Discussion of the various risks that a portfolio may be subject to and further the importance of the various risks to the various types of portfolio holders is undertaken. The basic elements of portfolio theory as it has been developed by Markowitz and others is presented. Various quantitative and descriptive approaches that are used in portfolio development are investigated. Techniques for measuring the effectiveness of the portfolio are illustrated. Prerequisites: 331, 336, or special permission of the instructor without 336.

431. FINANCIAL COMMERCIAL TRANSACTIONS. 3 cr.

The aims of the course are two-fold: 1) to make the student aware of the various types of transactions which are used in business and the basic elements of the transactions; 2) to look at the problem of working capital management from the point of view of the models available as they relate to the management of cash, accounts receivable, marketable securities, and various inventories. Consideration is given to the decision-making process for these assets under cases of both certainty and uncertainty, examining the models, their uses, and limitations. Prerequisite: 331.

432. CREDIT MANAGEMENT. 3 cr.

This course will be taught in such a manner so as to give to the student a thorough understanding of the function of credit management. In order that the student be afforded a maximum opportunity to grasp such information as presented in the literature and in the classroom,

cases, problems, and field experience may be assigned. Through these vehicles the student will have the opportunity to integrate the knowledge gained from text material and other financial sources with that of other disciplines to arrive at a logical, sound credit decision. Prerequisite: 331.

433. FINANCIAL MARKETS. 3 cr.

An extensive and intensive study of the markets in which the financing of needs takes place. Study is made of the markets for borrowing and lending of capital, both short-term and long-term. Financial institutional structures are given emphasis as they act and interact when serving as sources or intermediaries and users of funds. Research by the student is required to afford the student the opportunity to concentrate on an intensive effort upon an individual topic. Prerequisite: 331.

434. LIFE INSURANCE. 3 cr.

A study is made of the risks of death and longevity as they occur in personal and business situations. Analyses are made of various forms of life-insurance and annuity contracts and their uses, with emphasis upon their functions as instruments of estate creation and administration. Uses of insurance in connection with partners and key men, and in connection with bank loans, are explored. Attention also is given to accident and health coverages, group plans, pensions, and regulation of the industry.

PROPERTY AND LIABILITY

INSURANCE. 3 cr.

A study of business and personal applications of casualty, fire, and liability coverages in the form of both insurance and bonding, including the fields of workmen's compensation; landlords' and tenants' liabilities; burglary, robbery, and theft; automobile; credit and title insurance; fire and related lines; fidelity and surety bonding; and relevant aspects of inland and ocean marine.

436. ADVANCED CASE PROBLEMS

IN FINANCE. 3 cr.

The aim of this course is to provide a vehicle

through which the student can take material from prior courses and employ it in solving the more complex situations arising from comprehensive problem-solving situations. Emphasis is given to the decision-making process in such areas as asset management, budgeting, financial structure organizational format, and advanced theoretical material being employed in the business world. The vehicle used may be case material, actual field experience, comprehensive literature assignments, or any combination. Prerequisites: 331, 335, or special permission of the instructor.

437. REAL ESTATE

FINANCING. 3 cr.

A study of the problems involved in financing residential, commercial, and industrial real estate from the points of view of both owner and lender. Methods of financing covered include use of individual and business equity; loans secured by mortgages; land contracts; sale-and-lease-back arrangements; and cooperatives, syndicates, and real-estate trusts. Attention is given to procedures for originating, servicing, and foreclosing loans and mortgage arrangements by principals, agents, and mortgage bankers. Case problems either in class or of the field type are used to illustrate the techniques employed in determining the feasibility of a location. Special attention is given to an intensive research project in some area of interest to the student as related to real estate. Attention is also given to the requirements necessary to sit for the Pennsylvania Real Estate Salesman's License. Prerequisite: 331.

439. SEMINAR IN

FINANCE. 3 cr.

The topics will vary, depending upon current developments and the needs and interests of the students. As a part of the course requirement the student will be expected to develop a research paper upon some significant aspect of finance. The course should be taken by students who have completed most of the courses required in the concentration area.

QUANTITATIVE METHODS CURRICULUM

Students in the undergraduate School of Business and Administration complete a basic sequence in Quantitative Methods. This sequence is concerned with the application of mathematics, statistics, and electronic data processing to the analysis of business and economic problems. The objective of the program is to increase the student's knowledge and understanding of the uses of mathematics, statistics, and computers as aids in decision-making. The basic sequence is comprised of these courses: 181, 281, 282, and 381. Prior to entry into the sequence, Mathematics 109 and/or 111 in the College may be required of those students failing to satisfy entry requirements with respect to competence in basic algebra and calculus.

In addition to the basic sequence, a number of electives are offered for students wishing to include quantitative management science techniques in their areas of concentration.

181. INTRODUCTION TO COMPUTERS.

3 cr.

An introduction to the basic concepts of computer programming in algebraic and representational languages. The course introduces the algorithmic approach to problem-solving and continues through the development of flowcharts and programs, using the *Fortran* language. Brief treatment is also given to other business related languages. Prerequisite: Mathematics 109 in the College or equivalent.

operations; elementary probability theory; probability distributions; sampling distributions; statistical estimation; testing of hypotheses; time series analysis; simple linear regression and correlation. Prerequisites: 181 and Mathematics 111 in the College or equivalent.

281, 282. PROBABILITY AND STATISTICS.

3 cr. each

This sequence includes the basic ideas of descriptive statistics, inductive statistics, and probability. Among the topics covered are: frequency distributions; measures of central tendency; measures of dispersion; sets and set

381. INTRODUCTION TO DECISION SCIENCES.

3 cr.

The application of the scientific method of problem solving to business problems. The course includes various models and the methods of applying them to business situations. The models covered include linear programming, simulation, queuing, and inventory optimization. The use of library computer programs will be emphasized. Prerequisites: 281, 282.

DIVISION OF BEHAVIORAL SCIENCE

Chairman: SERGE GROSSET, Ph.D.

PROGRAM GUIDE FOR STUDENTS

The present combination of required courses and free electives gives the student a solid foundation in business and, at the same time, allows him to follow his inclination in a special field of endeavor. At the same time, the greater the freedom of choice, the greater the need for helping the student in selecting courses in a meaningful way.

Students should be aware that they can use this freedom either:

1. To broaden their cultural background by expanding in many different fields of knowledge, or
2. To establish, with the help of their advisor, a background of specialized knowledge in the field in which they have their strongest interest.

Several Study Programs—combining a concentration in Business (24 credits) with a judicious choice of electives from the College (27 credits)—are given as illustrations of the flexibility and the depth possible under the present program. Presently Study Programs are offered in:

Industrial Relations	International Business
Law Administration	Marketing Management
Production	Public Administration
Transportation and Traffic	Environment and Ecology

The listing of these Study Programs is only indicative, not inclusive; others may be structured, and the suggested areas can be modified according to the occupational objectives and preferences of the student.

INTERNATIONAL BUSINESS CURRICULUM

141. PHYSICAL AND ECONOMIC GEOGRAPHY.

3 cr.

This course examines the present and potential products of the world's major geographic regions. The course concerns itself essentially with man's utilization of natural resources in earning a living. Attention is given to the geographical foundations and operations of major industries including agriculture, manufacturing, extractive activities, and transportation. Principal domestic and world trade movements are analyzed.

142. ECONOMIC DEVELOPMENT OF EUROPE AND AMERICA.

3 cr.

A survey of the evolution of Western economic institutions and business practices. The origin of capitalism, the Commercial and Industrial Revolutions, the rise of the bourgeoisie, and the spread of capitalism are examined. A study is also made of the institutional development and productive growth of the United States economy. Emphasis is placed on analyzing economic issues, particularly the evolution of business institutions, within a historical context.

441. INTERNATIONAL BUSINESS.

3 cr.

A study of the techniques of international trade. Emphasis is given to the contract, overseas equipment, customs procedure in this country and abroad, marine insurance, packing for overseas trade, financing exports and import shipments, foreign exchange, and carriage of goods by air. Prerequisites: Mktg. 371, Econ. 221, 222.

442. INTERNATIONAL ECONOMICS.

3 cr.

This course is an introduction to international trade theory and the principles of international monetary economics as well as foreign trade policies. Topics to be discussed include: the classical and neoclassical theory of comparative advantage, foreign exchange markets and balance of payments, adjustment mechanisms, analysis of the consequences of trade regulation and international liquidity problems. Prerequisites: 221, 222 or 121, 122, 123.

LAW ADMINISTRATION CURRICULUM

This curriculum is designed to prepare professionals to aid in the solutions of one of society's most critical problems, that of the administration of legal systems. Future executives in court management, correctional institutions, and control systems (law enforcement) receive a broad interdisciplinary educational experience with the basic core coursework in the School of Business and Administration.

Students in this program should take these courses:

- | | |
|--------------------------------------|--------------------------------------|
| 453. Administration of Legal Systems | 462. Public Administration, and |
| 362. Behavioral Science | either |
| 364. Personnel Management | 465. Administrative Organization, or |
| | 413. Business Information Systems |

To supplement the basic core, students in the Law Administration sequence select the following or related courses in satisfaction of the School of Business and Administration requirement regarding liberal arts electives.

- | | |
|--------------------------------|---------------------|
| 478. Youth and Drug Abuse | 334. Delinquency |
| 002. Drug Abuse | 335. Criminology |
| 328. Psychology of Personality | 336. Social Control |
| 352. Abnormal Psychology I | 337. Corrections |
| 353. Abnormal Psychology II | |

Other coursework may be appropriate to fit a student's career objective. Counselors and school officers should be consulted.

PRE-LEGAL

The curriculum of the School of Business and Administration meets the requirements for registration for general purpose of the State Board of Law Examiners in Pennsylvania, and of the State Education Department of New York.

Coursework in the various areas of the School of Business and Administration provides good preparation for the professional study of law.

251. LEGAL PROCESS.

3 cr.

An introductory course exploring the nature of law, its sources, its relation to society and government; relation of the judicial to the executive and legislative functions; law as an instrument of social change and control; understanding of the legal rights and duties of persons. Acquaintance with areas of legal concern to the administrator such as labor, environmental controls, products liability, anti-trust concerns such as pricing and mergers.

contracts, the legal requisites of an enforceable agreement, the transfer of contractual rights and duties, the discharge of contracts; the relationship between principal and agent. Prerequisite: 251.

353. CONTRACTS.

3 cr.

Study of the law pertaining to the formation of

354. COMMERCIAL TRANSACTIONS. 3 cr.
Study of the provisions of the Uniform Commercial Code with reference to the nature and legality of sales of goods, the formality of the sale contract, transfer of title to goods, warranties; nature and kinds of commercial paper, requisites and meaning of negotiability methods of transfer. Prerequisite: 251.

355. LAW OF BUSINESS

ORGANIZATIONS.

3 cr.

Consideration of the nature, creation, and dissolution of the proprietorship, various types of partnerships, other unincorporated organizations, and the corporation. Duties, rights, remedies, and liabilities of owners and managers are studied. Prerequisite: 251.

453. ADMINISTRATION OF

LEGAL SYSTEMS.

3 cr.

Study of the legal system and the procedures by which legal rights and duties are effectuated and enforced; current problems and issues related to the system in the attainment of its objectives; administrative problems in the legal system. Prerequisite: 251.

MANAGEMENT CURRICULUM

In accord with the objectives of the University and of the School, the Management Curriculum aims are:

1. To acquaint students with managerial concepts and practices in both profit and non-profit organizations.
2. To offer an opportunity for some degree of specialization to those students who are interested in a study program in management.

361. PRINCIPLES OF

MANAGEMENT.

3 cr.

This course represents an initial introduction to the essential principles of management centered around the concept of management being a basic process which is distinct and applicable to all enterprises. Planning, organizing, actuating, and controlling comprise the fundamental functions of management, making up the management process. These functions constitute the framework around which this course is built. Emphasis is given to planning which is rapidly growing in managerial importance. Decision making, managerial creativity and the art of management are thoroughly developed.

ment are developed. Topics such as purchasing, inventory control, motion and time study, plant layout, pricing, etc. are covered. An intermediate course to be used as a basis for further specialized treatment of management areas in the advanced courses. Prerequisites: 361 and 281, 282—Probability and Statistics. Other related organizational problems are considered.

362. BEHAVIORAL SCIENCE.

3 cr.

This course is an introduction to the scientific study of behavior. It incorporates concepts from the disciplines of anthropology, psychology, sociology, economics, law, and political science, as well as from the newer fields of organization theory, game theory, and decision theory. This interdisciplinary approach to behavior provides an integrative framework for transfer to any organizational setting. Prerequisite: 361.

364. PERSONNEL

MANAGEMENT.

3 cr.

A course presenting techniques of manpower management. Involves study of recruiting and screening techniques, training programs, merit rating, wage payment plans, safety, disciplinary programming, etc. Current practice is presented in the form of case material. Prerequisite: 361.

363. PRODUCTION

MANAGEMENT.

3 cr.

A follow up course to Principles of Management in which all important phases of manage-

365. INDUSTRIAL RELATIONS.

3 cr.

A course developed to present to the student historical knowledge of the labor movement, current status and importance in industry, and the legal status of labor governing the actions of management in a myriad of ways. Presents the role of labor, management and government in collective bargaining and current industrial relations policies and practices. Prerequisite: 361.

461. HUMAN RELATIONS IN

ADMINISTRATION.

3 cr.

An advanced course treating of the human aspect as it is encountered in the industrial

organization. Involves an analysis of behavioristic patterns of individuals as individuals and as members of work groups. Deals with motivation, goals, needs, frustrations, etc. as they relate to the industrial situation. Prerequisites: Senior standing and 361.

462. PUBLIC ADMINISTRATION. 3 cr.

This course introduces the student to the content of public management and to the work of the public manager at federal, state, and local government levels. It also compares and contrasts public and private management and links management theory and practice. Lecture-discussions and participative methods are employed. Prerequisite: 361.

463. COLLECTIVE BARGAINING. 3 cr.

Study of the relation of federal and state legislation to collective bargaining; analysis of substantive issues and administrative aspects of collective agreements; specific provisions including adjustment of grievances; conciliation, mediation and arbitration; collective bargaining and public policy. Prerequisite: 361.

464. ADMINISTRATIVE ORGANIZATION. 3 cr.

A course presenting organizational concepts as they relate to the operation of an enterprise. Line, staff, and functional relationships are thoroughly developed. Both formal and informal relationships are considered as they are developed and exist within a firm. Authority, responsibility, delegation, centralization and decentralization of control and other related organizational problems are considered. Prerequisite: 361.

465. DEFENSE MANAGEMENT. 3 cr.

A three-hour study of management practices in one of the largest, most complex organizations in the world: The U.S. Department of Defense. The course highlights the interaction of

planning, programming, budgeting, coordinating, decision making, and procurement within DOD. Discusses DOD's application of accepted management of business concepts. The importance of effective management at all levels will be emphasized in view of the impact of all defense operations.

491. EXECUTIVE ACTION SIMULATION. 3 cr.

A course incorporating the Games Theory Approach. The teaching techniques of Case Method and Role Playing are combined in a simulated business environment in which the students make the decisions affecting the conduct of a business. Participants are divided into teams with key corporate duties being assigned and several teams compete against each other in an attempt to operate the "firm" on the optimum profitable basis. Prerequisites: Senior standing and 361.

492. EXECUTIVE POLICY. 3 cr.

Integrates concepts and skills from all functional areas of business and administration in decision making under conditions of uncertainty. Makes use of case histories and other information to allow students analysis and problem solving with the organization as a whole. Prerequisites: Senior standing and 361.

493. INDEPENDENT SCHOLARLY STUDY. 3 cr.

Student must initiate an original research project in a field of business of his choice. The project is then scrutinized by a Committee of three Faculty members. If the project is approved, the Dean will choose a faculty member as director of the project. The project must be completed within an academic semester. Prerequisite: Student must qualify as a University Scholar.

MARKETING CURRICULUM

In accord with the objectives of the University and of the School, the Marketing Curriculum aims are:

1. To develop an understanding and appreciation of distribution in our economy.

2. To explore the many basic activities involved in the marketing concept and in matching products to markets.
3. To provide an area of specialized study for those students who wish to pursue the marketing phase of business.

**371. PRINCIPLES OF
MARKETING.**

3 cr.

The emphasis throughout this course is on problem solving and decision-making in marketing. The basis for the course is a systematic analysis of customer behavior, and the development of marketing policies and programs. Marketing strategy and designing a marketing mix are stressed to give the student an insight into these areas, and the reduction of risks is emphasized through the use of quantitative and qualitative market research techniques.

372. MARKETING PROBLEMS.

3 cr.

This course employs the case method illustrative of typical marketing problems such as merchandising, advertising, selection of channels of distribution, and development of new products. These problems are analyzed as they affect different middlemen in the marketing structure including manufacturers, wholesalers, jobbers, brokers, agents, and similar functionaries. Theories of marketing are subjected to the test of practical examples so that the student may develop a more realistic grasp of the principles involved and the value of the practitioner's judgments. Current marketing developments are studied. Prerequisite: 371.

373. SALES ADMINISTRATION.

3 cr.

An introduction to the fundamentals of salesmanship and the problems confronted by the sales manager. Topics include such areas as: Production planning, pricing, packaging, qualitative and quantitative market analysis, and specific sales management functions of selection, training, equipping, compensating, supervising, and controlling salesmen. Prerequisite: 371.

471. MARKETING RESEARCH.

3 cr.

This course examines the means and methods business management uses to get the necessary information for decision making involving what to produce, how much to produce, and how to distribute goods that are produced. The various types of marketing research—consumer research, motivational research, market analysis, sales analysis and sales forecasting, product research, and advertising research—are studied in some detail. Prerequisite: 371.

472. TRANSPORTATION.

3 cr.

A comprehensive analysis of the historical evolution, operation and economic development of the railroads, motor carriers, water carriers and air carriers of the United States. The Interstate Commerce Act, with its amendments and the public regulation, state and federal, of the various carriers will be emphasized. Prerequisites: Mktg. 371, Econ. 221, 222.

**473. TRAFFIC
MANAGEMENT.**

3 cr.

This course deals with the organization and functioning of traffic departments of industrial concerns. Topics treated are: organization of shipping departments; car records for the control of private car lines; claims, routing, service and rating departments; regulations governing packing, shipping and sales; shippers' relations with carriers, freight and express tariffs; delays in transit; receipt and delivery of property. Intensive work in the rate structures of the United States will be an important item. Prerequisites: Econ. 221, 222.

DIVISION OF ECONOMIC SCIENCE

Chairman: SOM PRAKASH, Ph.D.

ECONOMIC SCIENCE CURRICULUM

121. ELEMENTS OF ECONOMICS.

3 cr.

Economics 101 is an introductory course in economics intended to afford an understanding of how our economic system works, of the forces which affect the level, composition, and distribution of the output of the economy, and of the issues behind current economic problems. The course content will define concepts, provide background materials, and develop economic ideas necessary to an understanding of the policy issues constantly before a complex dynamic economy.

122. INTRODUCTION TO MACRO ECONOMICS.

3 cr.

The emphasis is on the application of macro economic principles. A series of basic economic problems and issues will be examined in terms of an understanding of the basic problem. How society can achieve and maintain a full employment economy with reasonable economic stability.

123. INTRODUCTION TO MICRO ECONOMICS.

3 cr.

The primary aim of this course is to enhance and deepen the student's understanding of the market mechanism and how this mechanism responds to various governmental policies. More specifically, this course should enable the student to apply micro economic reasoning to current public issues, and use benefit-cost methodology in analyzing government expenditures.

The above set of courses has been designed for non-business students. However, taking one course does not obligate the student to take any additional courses in the sequence.

124. ECONOMICS OF DISCRIMINATION.

3 cr.

The main interest of this course is the diagnosis of the nature and causes of the problem of social, economic and educational underutiliza-

tion and underdevelopment of Black America. The course aims at the historic delineation of the factors responsible for this situation and the programs current and possible that may be utilized to improve the situation.

221. PRINCIPLES OF ECONOMICS I.

3 cr.

The first course in economics for the student who plans to major or minor in economics. The course seeks to acquaint the student with concepts and the logical basis to economic reasoning. Emphasis is placed on understanding the behavior of households and firms under competitive and imperfectly competitive market conditions.

222. PRINCIPLES OF ECONOMICS II.

3 cr.

This course is primarily concerned with aggregative economic relationships. The theory of the determination of national income is developed and attention is given to the construction of national income accounts. Attention is given to monetary and fiscal policy and their implications. Prerequisite: 211.

321. NATIONAL INCOME ANALYSIS.

3 cr.

A conceptual analysis of national income theory, its tools, its basic principles and its social and economic significance. The course treats the macroeconomic method of economic analysis. It is concerned with explaining the development and nature of national income aggregates. The basic principles of national income theory are developed and explained in order to place into focus the operations of the American economy and the many problems relating to it. Prerequisites: 221, 222 or 121, 122, 123.

322. PRICE AND PRODUCTION ECONOMICS.

3 cr.

An intensive study of the theory of demand, production and distribution. In addition, recent developments in the theory of imperfect com-

petition and oligopoly are carefully examined. Prerequisites: 221, 222 or 121, 122, 123.

323. PUBLIC FINANCE. 3 cr.
A study of the organization and management of government revenues and expenditures with emphasis on American practices and policies at the various levels of government. Benefit-cost and cost-effectiveness analysis with their implications for program and capital budgeting receive heavy consideration. The economic consequences of various tax structures and alternative social choice mechanisms are studied. Prerequisite: 321 or 322.

324. COMPARATIVE ECONOMIC SYSTEMS. 3 cr.
A comparative study of capitalism, socialism, communism and other economic systems with emphasis on analysis rather than mere description of the economics of various countries. Prerequisites: 221, 222 or 121, 122, 123.

325. URBAN ECONOMICS. 3 cr.
Urban economics is intended to afford an understanding of how the urban economy works, of the forces which affect the level, composition, and distribution of the output of the urban economy, and of the economic issues behind current urban problems. The course analyzes the processes, stages and determinants of urban economic growth and development. Urban economics focuses on the problems and policy in the urban economy: income inequality, manpower, local public finance, housing and land use patterns, and transportation. A particular emphasis of the course is to provide the student with the theoretical tools and show their application to the dynamic, complex urban economy. Prerequisites: 221, 222 or 121, 122, 123.

420. LABOR ECONOMICS. 3 cr.
Analysis of the principles for wage and employment determination in contemporary American economy under non-union conditions as well as under collective bargaining. The institutional development underlying labor supply and demand is studied with direct emphasis on its impact on employment and production, on the general wage-level and on wage differentials, on the distribution of national income and on

general social welfare. The course also includes a comparative study of problems in labor economics in American and other democratic countries. Prerequisites: 221, 222 or 121, 122, 123.

421. HISTORY OF ECONOMIC THOUGHT. 3 cr.
Shows the development of economic thought from the Age of Mercantilism to 1890. Major emphasis is placed upon the writings of Mun, Petty, Quesnay, Smith, Ricardo, Malthus, Marx, Jevons, and the Austrian School. It offers a study of the fundamental concepts of the writers and the influence of institutional conditions upon their philosophy. Major emphasis is placed upon value and distribution theory as it developed. Prerequisites: 321, 322.

422. MODERN ECONOMIC THEORY. 3 cr.
A brief review of classical tradition emphasizing Smith, Ricard, and Mill, and Marxian socialism showing their influence upon the evolution of Twentieth Century economic theory. Emphasis is placed primarily upon the writings of Marshall, Schumpeter, and Keynes, applying their theories to the problems of contemporary economic policy. Special emphasis is given to economic growth and development and the essentials of welfare economics in today's society. Prerequisites: 321, 322.

423. BUSINESS CYCLES AND FORECASTING. 3 cr.
This course is designed to study the process of economic change. Analyses of Seasonal, Cyclical, and Secular movements will be undertaken. Theoretical and empirical aspects will be covered. Forecasting techniques will also be studied. Prerequisite: 321.

424. BUSINESS AND PUBLIC POLICY. 3 cr.
A study of the regulatory techniques used by government to influence and modify business behavior. This course also includes an analysis of market structure, conduct and performance considerations pertaining to the firm and the industry. Emphasis is given to the anti-trust laws and special regulatory problems. Prerequisites: 221, 222 or 121, 122, 123.

425. CURRENT ECONOMIC ISSUES. 3 cr.

A seminar-like discussion of the state of the nation's economy and its current problems on the basis of critical examination of professional journal articles and economic reports by official and private sources (such as the President's Council of Economic Advisers). The purpose of the course is to begin developing in the graduating senior the ability to coordinate and apply the analytical knowledge he has acquired during his undergraduate study of economics and related fields of social science and business administration. Prerequisites: 221, 222 or 121, 122, 123.

426. MONETARY THEORY AND POLICY.**3 cr.**

This course presents the chief theoretical contributions on money. The policy implications of these theories, past and present, will be emphasized. Concentration will center upon policy proposals and controversy in the monetary field since World War II. The theories and contributions of Wicksell, Fisher, J. M. Clark, Keynes, Robertson and Modigliani, among others, are reviewed. The role of interest rate is reviewed along with wage-price controversies, international gold flows, and the relationships between fiscal and monetary policies. Prerequisites: 221, 222, 322 or 121, 122, 123.

427. THEORY OF ECONOMIC DEVELOPMENT.**3 cr.**

The course is designed to acquaint students with the area of economic development. The subject matter of this course conveniently divides itself into five major categories: the nature of development and problems of meas-

urement, theories of development; factors and forces affecting economic growth; different approaches to a higher standard of living; and problems of domestic and international stability. Approach to this course encompasses detailed study as well as a strong emphasis on theoretical and critical analysis. Prerequisite: 321.

428. PROBLEMS, POLICIES AND CASE STUDIES IN ECONOMIC DEVELOPMENT.**3 cr.**

This course is a continuation of the first semester course in economic development. An attempt is made in this semester to apply the tools, techniques, and theories of development to selected regions and countries of the world. The course is divided into four broad areas—the nature and problems of the case study method, the nature of the socio-economic structure and its impact on development, problems of measurement and of comparison, and the changing role of the basic factors of production. Considerable time will be devoted to a critical study of the actual policy measures adopted for development by selected countries. Prerequisite: 427.

429. SEMINAR IN ECONOMICS.**3 cr.**

The purpose of the seminar is to provide a vehicle for the advanced student to investigate separate subject areas in the field of Economic Theory. The intention is to provide a sound basis for further study at the graduate level. Seminar procedure will stress written and oral reports. Prerequisites: 321, 322 and permission of the instructor.



School of Education

HISTORY

Prior to 1929, teacher preparation courses were offered through a department of the College of Liberal Arts and Sciences; in that year the newly-organized School of Education granted its first degrees in programs of secondary education. The following programs have since been approved for certification by the Department of Education of the Commonwealth of Pennsylvania: music education in 1930; graduate education, 1936; elementary education, 1937; guidance, 1952; school administration and supervision, 1952; library science, 1956; special education, 1964; reading specialist and reading supervisor, 1969; school psychologist, 1969; early childhood education, 1975.

SELECTION AND ADMISSION

Candidates who express a desire to become teachers are admitted to the School of Education through the University Office of Admissions (apply to Director of Admissions, Duquesne University, Pittsburgh, Pa. 15219). The curriculum for the first two years (approximately 60 credits) is devoted to the broad learnings in general and basic professional education and beginning course work in a major discipline or area of concentration.

The School of Education includes and maintains in its enrollment only those students who give definite indications of teacher potential. Students are, therefore, expected to demonstrate developing personal and professional characteristics, attitudes, and competencies which will recommend them as worthy candidates for the teaching profession. Evaluation and approval by the faculty is based on the student's development of:

1. A well-balanced personality as evidenced through personal appearance, health and vitality, emotional maturity, verbal fluency, self-confidence, cooperation, judgment and tact, adaptability and resourcefulness, cultural appreciation, and social relationship.
2. Professional attitudes and competencies as evidenced through interest in teaching, preparation in subject matter and in teaching methods and techniques, participation in laboratory experiences, including observation and student teaching, and the demonstration of necessary abilities and skills.

CURRICULUM

GENERAL EDUCATION

The School of Education requires completion of the established core program which includes courses in the humanities, social sciences, natural and behavioral sciences, and, for Catholic students, theology.

PROFESSIONAL EDUCATION

The basic professional education program introduces the student to the teaching profession through thorough study of the principles and practices of education and the learning process. Special professional education programs introduce the student to the specific teaching techniques and methods required for specific fields of concentration—elementary, secondary, special, or early childhood education.

PROFESSIONAL LABORATORY EXPERIENCES

The School has developed a broad and diversified professional laboratory experience program designed to provide opportunities for observing and working with children and youth. These include:

1. Programs in neighborhood and community centers, hospitals, recreational and youth organizations, and summer camps.
2. Planned observation in public and private school classrooms.
3. Group observation in schools and institutions dedicated primarily to the care of exceptional children.
4. Teacher-aide or tutorial service in public and private schools.
5. Student teaching in a public or private school for an entire semester or year.

All of these experiences are completed under professional supervision from the University and from the off-campus agency or public school.

STUDENT ORGANIZATIONS

The School of Education includes in its program opportunities for participation in student organizations related to professional education preparation. Students are encouraged to take an active part in these professional organizations, for such interest is interpreted as reflecting social and educational development. The organizations are:

Duquesne University Chapter of the Council for Exceptional Children, state and national student organizations in Special Education.

Kappa Delta Epsilon, national education sorority.

HONOR AWARDS

These awards, presented at the annual Honors Day Convocation, are open to undergraduates in the School of Education:

Faculty Award for General Excellence in Secondary Education.

Faculty Award for General Excellence in Elementary Education.

Faculty Award for General Excellence in Special Education.

Kappa Delta Epsilon National Professional Education Sorority Award for outstanding member of Alpha Kappa Chapter.

Kappa Delta Epsilon National Professional Education Sorority President's Award.

Lawrence A. Roche Memorial Award to a junior student for general excellence in the School of Education.

Philip C. Niehaus Memorial Award for outstanding achievement in the School of Education.

Helen S. Platt Memorial Award based on financial need to a junior student majoring in Special Education.

Council for Exceptional Children Award for outstanding work in the organization.

TEACHER CERTIFICATION

Through completion of a degree, a student will be eligible for a Pennsylvania Instructional I (Provisional) Certificate to teach a subject or in an area for which the curriculum pursued is designed. All programs are approved by Pennsylvania Department of Education, and certification in Pennsylvania enables a student to meet certification requirements in various other states. Application for the certificate must be made through the Dean's Office during the semester in which the student expects to be graduated.

CLASS ATTENDANCE

The School of Education faculty has determined that the following policy will be in effect for the School of Education and will be adhered to by all professors who teach undergraduate courses: It is presumed that each student in a professional course will normally attend every session. The maximum number of cuts permitted is equated in credit units, not in periods the class meets; in other words, three cuts for a three credit course.

DEGREE

Curriculums in Early Childhood, Elementary, Secondary, and Special Education lead to the degree of Bachelor of Science in Education.

PROGRAMS

***EARLY CHILDHOOD EDUCATION**

The program, in accord with the philosophy and objectives of the School of Education, offers students opportunity to qualify for:

1. The Instructional I (Provisional) Certificate to teach early childhood education classes in the schools of Pennsylvania for a period of three years.
2. Admission to graduate programs in education.

This program cannot be completed on a part-time basis. The last 30 credits must be earned at Duquesne University. The minimum number of credits for graduation is 120.

General Education*Courses Credits*

Courses in all these areas, for a total of 54 credits, are required:

English Area	15
English Composition	6
English Elective	3
Communications Area (Speech, Journalism, English)	6
Mathematics and/or Science	12
Social Science	12
(Anthropology, Economics, Geography, History, Political Science, Sociology)	
Philosophy and/or Theology	9
Psychology	6
(Introduction to Psychology is a prerequisite to all others)	

***Professional Education**

All courses, for a total of 31 credits, are required.

Foundations of Education	3
Educational Psychology	3
Child Development I	4
Child Development II	2
Early Childhood Education I	4
Early Childhood Education II	4
Curriculum Development I	3
Curriculum Development II	3
Language Development and Reading	3
Research Seminar	2

Education Electives*Courses Credits*

Nine credits from among the following courses are required:

Field Observations	1-5
Introduction to Art	3
Teaching Elementary Language Arts and Social Studies	3
Teaching Elementary Mathematics and Science	3
Children's Literature	3
Music for the Classroom Teacher	2
Problems in Speech	3
Reading in the Elementary School	3
Problems in Teaching Reading	3
Learning Resources	3
Human Development	3
Eurhythmics	2-4
Independent Study	1-2

Professional Semester

Both courses, for a total of 12 credits, are required.

Student Teaching in Early Childhood	10
Planning Programs for Young Children	2

Other Electives 14

*As this program has been cooperatively developed by Duquesne University and Carlow College for Pennsylvania Department of Education approval, some or all of the professional courses in Early Childhood Education may be offered on the Carlow campus.

ELEMENTARY EDUCATION

This program, in accord with the philosophy and objectives of the School of Education, offers students opportunity to qualify for:

1. The Instructional I (Provisional) Certificate to teach in the elementary schools of Pennsylvania for a period of three years.
2. Admission to graduate programs in education.

This program cannot be completed on a part-time basis. The last 30 credits must be earned at Duquesne University. The minimum number of credits for graduation is 120.

General Education

Courses *Credits*
Courses in all these areas, for a total of 54 credits, are required.

English Area 15

English Composition 6

English Elective 3

Communications Area

(Speech, Journalism,
English) 6

Mathematics and/or Science 12

Social Science 12

(Anthropology, Economics,
Geography, History, Political
Science, Sociology)

Philosophy and/or Theology 9

(Includes 3 credits in Theology
required for Catholics)

Psychology 6

(Introduction to Psychology is
a prerequisite to all psychology
courses)

Professional Education

All courses, for a total of 15 credits, are required.

Foundations of Education 3

Educational Psychology, Child

Development, or Adolescent
Development 3

Reading in Elementary School 3

Teaching Elementary Language

Arts and Social Studies 3

Teaching Elementary Math and

Science 3

Supporting Electives

Courses *Credits*

Phonetics 3

History Elective 6

Survey of American Federal

Government 4

Sociology Elective 3-6

Psychology Elective 3-6

Visual Arts 3

Introduction to Music 3

English Elective 6

Modern Language 18

Mathematics 12

Science 6-8

Introduction to Political Science 3

Education Electives

Nine credits from among the following courses are required:

Human Development 3

Children's Literature 3

Introduction to Art 3

Music for Classroom Teacher 2

Psychology of Identity and

Fulfillment 3

Learning Resources 3

Eurhythmics 1-2

Field Observation 1-5

Independent Study 1-2

Problems in Teaching Reading 3

Mainstream Seminar 3-6

Independent Study 1-2

Youth and Drug Abuse 2

***Professional Semester** **Credits**

Student Teaching plus Seminar 12

*No student may register for additional course work during this professional semester without permission of the Committee on Student Standing.

MUSIC EDUCATION

General and professional course work and professional education courses required for this program are outlined in the School of Music section, page 107.

SECONDARY EDUCATION

The Secondary Education Program, in accord with the philosophy and objectives of the School of Education, offers students opportunity to qualify for:

- 1. The Instructional I (Provisional) Certificate to teach certain subjects in the secondary schools of Pennsylvania for a period of three years. Four-year programs lead to certification in: biological science, chemistry, communications (with emphasis in English, journalism, or speech and theatre), general science, Latin, mathematics, modern languages (French, German, Spanish), physics, social studies (economics, history, political science, psychology, sociology).
- 2. Admission to graduate programs in education.

This program cannot be completed on a part-time basis. The last 30 credits must be earned at Duquesne University. The minimum number of credits for graduation is 120.

General Education

<i>Courses</i>	<i>Credits</i>
Courses in all these areas, for a total of 54 credits, are required.	
English Area	15
English Composition	6
English Elective	3
Communications Area (Speech, Journalism, English)	6
Mathematics and/or Science	12
Social Science	12
(Anthropology, Economics, Geography, History, Political Science, Sociology)	
Philosophy and/or Theology	9
(Includes 3 credits in Theology required for Catholics)	
Psychology	6
(Introduction to Psychology is a prerequisite to all other psychology courses)	

Professional Education

<i>Courses</i>	<i>Credits</i>
All courses in this area are required.	
Foundations of Education	3
Educational Psychology, Child Development, or Adolescent Development	3
Methods in Major Field	2
Secondary Teaching Techniques Laboratory	1-2
Professional Semester	
Secondary Student Teaching	9
School Law and Pupil or Youth and Drug Abuse	2
Reading in Secondary Schools	3
*For Communications certification, 18 credits are required, with six in English, six in journalism, and six in speech and theatre, for a total of 57 credits in the General Education area.	

SUBJECT AREA CERTIFICATION REQUIREMENTS

A minimum of 30 credits (semester hours) is required for certification in the following disciplines: biology, chemistry, communication, general science, Latin, mathematics, modern languages, physics, and social studies. This is in addition to the General Education requirements.

<i>Major</i>	<i>Major Field Requirements</i>	<i>Supporting Courses</i>
Biology	Consult with Biology Department	Mathematics, chemistry, and physics
Chemistry	Consult with Chemistry Department	Mathematics and physics
Communications		
English Emphasis	Consult with English Department	Journalism, speech
Journalism Emphasis	Consult with Journalism Department	Speech, English
Speech Emphasis	Consult with Speech Department	English, journalism
General Science	Minimum of eight credits in biology, chemistry, and physics, and additional courses to total a minimum of 18 semester hours in one field of science	
Latin	Consult with Classics Department	
Mathematics	Calculus I, II, III	General analytical physics
Modern Languages	Consult with Modern Languages Department	Philosophy linguistics
Physics	Consult with Physics Department	Chemistry, mathematics, biology
Social Studies	Economics, history, political science, sociology, psychology	Philosophy, anthropology, psychology

SPECIAL EDUCATION (MENTALLY AND/OR PHYSICALLY HANDICAPPED)

The program, in accord with the philosophy and objectives of the School of Education, offers students opportunity to qualify for:

1. The Instructional I (Provisional) Certificate to teach special education classes in the schools of Pennsylvania for a period of three years.
2. Admission to graduate programs in education.

This program cannot be completed on a part-time basis. The last 30 credits must be earned at Duquesne University. The minimum number of credits for graduation is 120.

In addition to the General Education requirements (see page 91), a student must earn the following credits:

Professional Education

In addition to 54 credits in general education, a minimum of 65 credits is required in professional education.

<i>Areas and Courses</i>	<i>Credits</i>	
Foundations of Education	12	
Foundations of Education	3	
Educational Psychology	3	
Child Development	3	
Adolescent Development	3	
Special Education	32	
Field Experiences	6	
Moderately and Severely Handicapped	2	
Vocational Education <i>and</i>	2	
<i>either</i>		
Mildly Handicapped—Elementary	2	
<i>or</i>		
Mildly Handicapped—Secondary	2	
Foundations of Special Education	3	
Reading in the Elementary School	3	
Teaching Elementary Mathematics/Science	3	
*Methods in Special Education I	3-4	
**Methods in Special Education II	3-4	
Teaching the Moderately and Severely Handicapped	3	
Teaching the Mildly Handicapped	3	
Vocational Education for the Handicapped	3	
Education Electives	9	
Problems in Speech	3	
Interpersonal Classroom Management—Teaching	3	
Introduction to Art	3	
Teaching Elementary Language Arts/Social Studies	3	
Mainstream Seminar	3	
Abnormal Psychology	3	
Music for the Exceptional Child	3	
Hearing and Audiology	3	
Speech Problems of the Exceptional Child	3	
Independent Study	1-2	
Children’s Literature	3	
Problems in Teaching Reading	3	
Seminar in Special Education	1-3	
Professional Semester	12	
Student Teaching-Special Education	12	

*Prerequisites: Reading in the Elementary School and Teaching Elementary Mathematics/Science.

**Prerequisite: Methods in Special Education I.

COURSE DESCRIPTIONS

EDUCATIONAL FOUNDATIONS AND PSYCHOLOGY

201. CHILD DEVELOPMENT. 3 cr.
Behavior and personality characteristics of children from birth to adolescence as they relate to school and home situations.

202. ADOLESCENT DEVELOPMENT. 3 cr.
Physical, mental, moral, emotional, and social development of the adolescent, including needs,

interest, and adjustment problems.

203, 204, 205, 206, 207.
FIELD EXPERIENCE. 1 cr. each
Classroom and other school experience as an aide or observer. Enrollment with consent of the Director of Student Teaching or a School of Education faculty advisor; one credit each semester for a maximum of five semesters.

210. INTERPERSONAL CLASSROOM**MANAGEMENT FOR TEACHERS. 3 cr.**

The major emphases of this competency based course are the teacher's personal awareness of 1) his/her feelings and emotions and 2) his/her personal, interpersonal, societal, and educational values; 3) the teacher's understanding of the dynamics of groups; and 4) the teacher's management of classroom situations.

227. HUMAN DEVELOPMENT. 3 cr.

Growth and development of the child, with an emphasis on understanding personality development and problems of growing up.

**301. FOUNDATIONS OF
EDUCATION.****3 cr.**

Introduction to the study of the philosophical, social, and historical foundations of education and the relationships between the school and other institutions of society. Required for all types of state certification.

**333. 334. MAINSTREAM
SEMINAR.****3 cr.**

This seminar is designed to acquaint the regular teacher with the nature of the exceptionalities which are characteristic of the handicapped child who may be mainstreamed into the regular classroom. Emphasis will be on teaching strategies in developing instructional programs for the mainstreamed handicapped child.

**351. EDUCATIONAL
PSYCHOLOGY.****3 cr.**

The genetic approach to mental development; the laws of learning and the principles of memory, motivation, transfer and personality development. Measurement in the school program will be studied, coupled with basic statistical concepts for the functional application of these principles.

**361. PSYCHOLOGY OF IDENTITY
AND FULFILLMENT.****3 cr.**

Implications of the psychology of personality for the wholesome development of personality and for the prevention of lasting personality disturbances.

**478. YOUTH AND DRUG
ABUSE****2 cr.**

Problems of drug abuse and today's youth,

including drugs used, the primary toxic and psychological effects, historical and legal aspects. Methods of teaching drug abuse at various levels in the school system are covered, together with availability of literature and visual aids and demonstrations of drugs.

480. INDEPENDENT STUDY. 1-2 cr.

With permission of an instructor and approval of the Dean, seniors may pursue in-depth study of a subject area or engage in individual projects related to their professional goals.

481. LEARNING RESOURCES. 3 cr.

Identification, location, utilization, and creation of learning materials; adaptation of print and non-print materials to meet curricular needs; developing materials for individualized classroom instruction.

**495. PROBLEMS IN TEACHING
READING.****3 cr.**

Reading difficulties on elementary and secondary school levels; discussion of classroom and clinical procedures in solving reading problems; diagnostic and corrective techniques and materials for the classroom teacher; reading improvement programs; special unit on reading problems of the mentally retarded.

**496. EVALUATION OF
LEARNING.****2 cr.**

Principles of test construction; examination analysis, and interpretation of other media for appraisal of pupil growth and achievement.

**498. DEVELOPMENTAL
READING.****2 cr.**

A survey course in the teaching of reading; appropriate for both elementary and secondary education majors. Major emphasis is on methods of teaching reading, the materials for evaluating pupil growth in reading, and reading in the content subjects.

**499. SCHOOL LAW AND
THE PUPIL.****2 cr.**

School law as it affects the child—census, admission practices, vaccination, compulsory attendance; the neglected, dependent, and delinquent child; work periods, graduation requirements, special school services, and other regulations pertaining to the health and welfare of the child.

EARLY CHILDHOOD EDUCATION**301. CHILD****DEVELOPMENT I. 4 cr.**

Focuses upon the substantive developmental growth in the child from conception through the fourth year of life. Specific emphasis is given to normative physical, intellectual, social, and emotional faculties developing during infancy (ages 0 through 2 years) and during the pre-school years (ages 3 and 4). The role of the family as primary socializing agent is stressed.

302. CHILD**DEVELOPMENT II. 2 cr.**

Emphasizes normative physical, intellectual, social and emotional growth and development in the child through the pre-primary and primary school years (ages 5 through 8). Attention is given to the role of the school as socializing agent during these years.

304. EARLY CHILDHOOD**EDUCATION I. 4 cr.**

The first half of the course encompasses the complete history of child development and early childhood education beginning with the contributions of early educators, Pestalozzi, Froebel, etc., and continuing through the eighteenth, nineteenth, and twentieth centuries. The second half of the course examines recent trends, such as Day-Care Centers, Head Start, Project Follow Through, etc., with participation in child-care programs required.

305. EARLY CHILDHOOD**EDUCATION II. 4 cr.**

Students will examine the humanistic, behavioristic, cognitive-developmental, and psychodynamic theories of child development. In-depth study of early childhood education models—Montessori Method, Bank Street Early Education Program, Demonstration and Research Center for Early Education, Bereiter-Engleman Curriculum, etc.,—will be a requirement along with participation in pre-school programs.

307. CURRICULUM**DEVELOPMENT I. 3 cr.**

Focuses upon the development of creative abilities in children, age three through eight.

Areas covered will include art, music, creative dramatics, and physical activities. Planning and implementing activities are required.

308. CURRICULUM**DEVELOPMENT II. 3 cr.**

Focuses on fostering the young child's curiosity in the environment as reflected in the physical and social sciences. Planning and implementing activities are required.

**401. LANGUAGE DEVELOPMENT
AND READING. 3 cr.**

Emphasis is placed on oral expression as a base for development of all language skills including reading. Reading readiness programs and reading programs for the primary level are examined.

403. RESEARCH SEMINAR. 2 cr.

Designed to acquaint the undergraduate student with general research methodology in child development as preparation for critical consumption of research.

**405. PLANNING PROGRAMS FOR
YOUNG CHILDREN. 3 cr.**

Emphasis is placed upon principles and techniques involved in planning and administering programs, such as parent involvement, law and the young child, community relations, licensing procedures, health regulations, equipment selection, and classroom management.

**490. STUDENT TEACHING IN EARLY
CHILDHOOD EDUCATION. 8 cr.**

The student teaching experience is considered to be one of the most important single elements of the program. The prospective teacher is involved in a pre-school primary setting where he/she shares the teacher role, applies and constructs theory and develops his/her own teaching style.

ELEMENTARY EDUCATION**203. PROBLEMS IN
SPEECH. 3 cr.**

A survey of various speech and hearing disorders, and causes; recognition and possible therapy. Prerequisite: Speech 201.

320. INTRODUCTION TO ART.

3 cr.

Designed to acquaint the student with materials, methods, and techniques used in relating arts and crafts to purposeful learning activities, with particular attention given to the needs of the mentally retarded child.

325. READING IN ELEMENTARY SCHOOL.

3 cr.

Principles, materials, and methods of instruction in reading on the elementary school level; growth toward independent reading skills; development of techniques; appraisal, record and report of progress.

331. TEACHING ELEMENTARY LANGUAGE ARTS AND SOCIAL STUDIES.

3 cr.

The theories, techniques, practices, and content pertaining to the areas of language arts and social studies. Pre-professional laboratory experiences in a public school.

332. TEACHING ELEMENTARY MATHEMATICS AND SCIENCE.

3 cr.

The theories, techniques, practices, and content pertaining to areas of mathematics and science. Pre-professional laboratory experiences in a public school.

484. CHILDREN'S LITERATURE.

3 cr.

A general survey of books and other printed materials for children; criteria for the evaluation and analysis of children's books; types of books available, considered in terms of interests, needs, and abilities of children.

490. ELEMENTARY STUDENT TEACHING.

9 cr.

Student teaching in an approved public elementary school under the direct supervision of a cooperating teacher.

493. SEMINAR IN ELEMENTARY TEACHING.

3 cr.

Exploration of learning styles, methods and practices of meeting individual differences in the classroom; role-playing and simulated experiences.

SECONDARY EDUCATION

364. METHODS IN SECONDARY TEACHING.

2 cr.

365. SECONDARY TEACHING TECHNIQUES LABORATORY.

1-2 cr.

This is a team-taught learning experience that uses videotape technology to aid students toward mastery of five teaching competencies: planning, questioning, using varied materials and techniques, working with small groups, and evaluation. Evaluation is done via self-analysis, peer evaluation, and instructors' feedback. Learnings are tested in 365-Teaching Laboratory and in Student Teaching. Student must register for both courses concurrently.

490. SECONDARY STUDENT TEACHING.

9 cr.

Student teaching in an approved public secondary school under the direct supervision of a cooperating teacher.

497. READING IN SECONDARY SCHOOLS.

3 cr.

A survey course in the teaching of reading; appropriate for secondary education majors. Major emphasis is on methods of teaching reading, the materials for evaluating pupil growth in reading, and reading in the content subjects.

SPECIAL EDUCATION

211, 212, 213, 214. FIELD EXPERIENCES.

2 cr. each

Classroom and other experiences in educational, social welfare, and vocational settings as an observer and participant. Enrollment with consent of Director of Student Teaching and School of Education faculty advisor. 211 and 212 are required experiences and the student may choose between 213 and 214 to complete the six credits of special education field-experiences that are required.

309. FOUNDATIONS OF EXCEPTIONAL CHILDREN.

3 cr.

Survey of the social, psychological, and physical characteristics of the various types of

exceptional children and of methods for meeting their educational needs; includes field trips to schools and classes which specialize in the education of the typical child. Prerequisites: 201, 202.

**374. MUSIC FOR THE
EXCEPTIONAL CHILD. 3 cr.**

Singing and rhythmic movement activities are basic to this course. It also includes folk dance, listening, and instrumental (percussion instruments) experiences.

**376. METHODS IN SPECIAL
EDUCATION I. 4 cr.**

An introduction to the educational management techniques utilized in programs for exceptional persons. Information covering assessment procedures, general classroom management, designing individual educational programs and prescriptive teaching will be included. Prerequisites: 309, 325, 332.

**377. METHODS IN SPECIAL
EDUCATION II. 4 cr.**

A sequel to 376-Methods in Special Education I in which skills in consulting with parents, specific classroom management procedures, and individual tutoring skills are introduced. Participants will be required to tutor a student at a selected site one full morning a week. Prerequisite: 376.

**485. TEACHING THE MODERATELY
AND SEVERELY HANDICAPPED. 3 cr.**

Evaluation and integration of the various theories, methodologies, curriculum content, instructional techniques, and evaluation procedures for the Moderately and Severely Handicapped.

**487. TEACHING THE MILDLY
HANDICAPPED. 3 cr.**

Evaluation and integration of the various theories, methodologies, curriculum content, instructional techniques, and evaluation procedures for the mildly handicapped.

**488. VOCATIONAL EDUCATION FOR
THE HANDICAPPED. 3 cr.**

An overview of the pre-vocational, vocational, career, and occupational education programs designed to be used for exceptional persons. Students will be given information and experiences enabling them to design and implement instructional programs appropriate to the vocational needs of mentally and physically handicapped persons. Prerequisites: 485, 487.

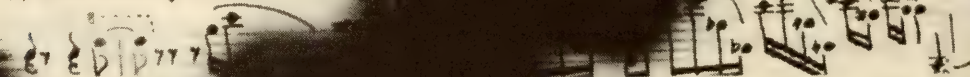
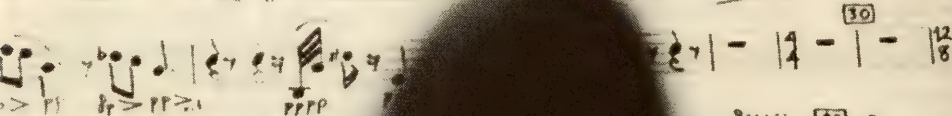
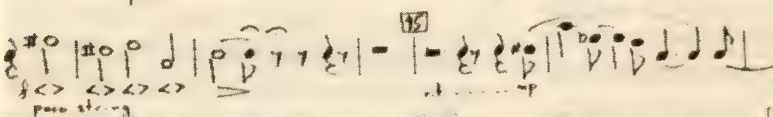
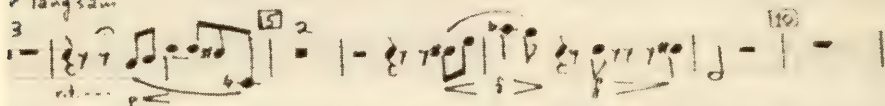
**490. STUDENT TEACHING—
SPECIAL EDUCATION. 9 cr.**

A full semester of supervised classroom experience at a carefully-selected school for mentally retarded pupils.

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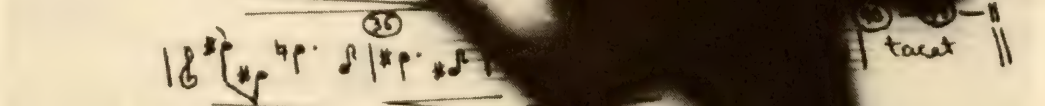
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Violin I

Sentimentales - IV

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School of Music

HISTORY

Duquesne University, recognizing that it was most fortunately situated to offer outstanding opportunities for professional preparation in music, in 1926 established a School of Music with a four-year course of study leading to the Bachelor of Music degree. The music education program was approved by the Pennsylvania Department of Education in 1930. In 1959 the School became an associate member of the National Association of Schools of Music and in 1966 was elected to full membership. On April 29, 1967 a new air-conditioned music building was dedicated. Van Cliburn was awarded an honorary Doctor of Music degree on this occasion.

PHILOSOPHY AND OBJECTIVES

The administration and faculty of the School of Music believe that the development of the artistic personality is entirely compatible with the highest objectives of scholars in all fields. It is felt that the best place to educate music students to take their place in society is in a situation where they have an opportunity to share their academic courses in classes with students from other schools of the University. The great advantage of a solid musical preparation and the opportunity to participate in nationally recognized organizations and in performances of professional caliber are available to all of our students.

The faculty of musical scholars and artists with whom Duquesne students work believes that fine talents are best encouraged and developed in an atmosphere that is friendly while at the same time committed to the development of excellence. The faculty, selected with care, includes the names of concert and opera soloists, members of the Casals Festival Orchestra, the Pittsburgh Symphony, nationally known composers, authors, arrangers, conductors, clinicians, and music educators. The Pittsburgh Symphony, Pittsburgh Opera, chamber music and concert series, WDUQ (the Duquesne University radio station) and the high level of interest on the part of other radio and television stations in the arts serve as unusual stimuli to the eager music student.

The Symphony Band and the Concert Band, in their many performances on and off campus, present a wide variety of standard and contemporary repertoire.

The Symphony Orchestra offers fine opportunities for the student interested in orchestral literature. Association with teachers who are members of the Pittsburgh Symphony is an exceptional advantage.

The School also maintains various vocal and instrumental ensembles that are receiving national recognition for the excellence of their performances.

The objectives of the School of Music are to educate teachers and performers of music who should possess a sensitive and intelligent musicianship, and who will be equipped, by reason of their general and professional education, to accept positions in fields of performance and/or education.

ADMISSION

Students who are interested in applying for admission to the School of Music should request an application from the Office of Admissions, Duquesne University, Pittsburgh, Pennsylvania 15219. After applications have been processed, candidates will receive a notice requesting that they contact the Office of the School of Music to arrange an appointment for an audition and a theory entrance examination. Specific instructions concerning the audition will then be mailed to the applicant. A tape recording will be accepted for those living more than 150 miles from the University. However, in the event the recording is not satisfactory, a personal audition may be required. All applicants will be notified of the status of their candidacy as soon as possible.

Students planning to major in Music Education are urged to begin study of piano and theory prior to entrance.

ADVISEMENT

At initial enrollment, every student is assigned a faculty advisor who provides assistance with academic matters, especially during pre-registration periods. Guidance in professional objectives will also be provided by faculty committees established for that purpose.

SPECIAL FEES

Student Teaching	\$ 25.00
Instruction in voice or instrument as a minor, each semester	\$ 25.00
Piano Class Fee, each semester	\$ 10.00
Instrumental rental for use in major study:	
Harp, String Bass, Oboe, Bassoon, Tuba and Percussion	\$ 50.00
All other instruments	\$ 25.00
Instrumental rental for use in minor study:	
Harp, String Bass, Oboe, Bassoon, Tuba and Percussion	\$ 20.00
All other instruments	\$ 10.00
Instrument for class use	\$ 10.00
Organ practice (major or minor) each semester	\$ 10.00

Summer Session

Private Instruction Fees

Two hours a week (major)	\$ 75.00
One hour a week (major)	\$ 37.50
One hour a week (minor)	\$ 25.00

Instrumental Rental

Instrument for class use	\$ 5.00
Instrument for summer months	\$ 15.00
Instrument for use in six-week Summer Session	\$ 5.00
Organ practice for use in six-week Summer Session	\$ 5.00

Special Students—Private Instruction

These fees are charged to non-degree students and others taking the instruction without credit.

One hour a week	\$272.00
One half hour a week	\$181.00
One hour a week (Summer Session)	\$161.00

Fees Which May Be Applicable When Student Is Taking Fewer Than 12 Credits

Instruction in voice or instrument as a major, each semester	\$100.00
Practice room	\$ 15.00
Music fee	\$ 10.00

DEGREES

The School offers programs leading to two undergraduate degrees: The Bachelor of Music and the Bachelor of Science in Music Education. The Bachelor of Music degree may be earned with a major in piano, organ, voice, or orchestral instruments. These programs are intended for the student interested primarily in performance careers in concert, television, radio, symphony orchestra, and opera, as well as teaching careers in colleges or private studios. Two Music Education programs are offered, one in general music and the other in music therapy; the former is designed to meet certification requirements for teaching in elementary and secondary schools while the latter leads to certification as a registered music therapist. All programs begun at the undergraduate level, except music therapy, may be continued at the graduate level.

EQUIPMENT

The School of Music has 73 pianos including 56 Steinways. All practice rooms have Steinway uprights. There are two Moeller and one Fischer practice organs, a three manual Moeller organ, and an electronic organ. More than 300 orchestral and band instruments are available for instrument classes, including an EMS Sound Synthesizer. Listening and recording equipment are of professional quality.

STUDENT ORGANIZATIONS

Chapters of the national music fraternity, *Phi Mu Alpha Sinfonia*, and the national music sorority, *Mu Phi Epsilon*, contribute substantially to the students' professional and social development. The *Music Educators National Conference* has an active student chapter which sponsors professional programs and attends and participates in the state, regional, and national activities of the association. There are active student chapters of the *American Guild of Organists* and the *National Association of Music Therapists*. *Student Council* is the organization which is designed to represent

the total student body at the School of Music. In addition, it provides an excellent vehicle of communication among students, faculty, and administration.

HONOR AWARDS

The Dean's Award is presented to a senior music student for general excellence.

The Seibert Medal is presented to a senior for excellence in violin or piano.

George Barrere Memorial Scholarship. The Pittsburgh Flute Club offers a scholarship in flute in memory of George Barrere, founder of the first flute club in the United States. This \$300 scholarship is awarded to a freshman or sophomore flute major.

Polish Arts League Scholarship is made annually by the Polish Arts League of Pittsburgh to an outstanding performer in the School of Music. Preference will be given to a student of Polish ancestry. Other students will not be excluded from consideration.

Pittsburgh Flute Club Award is given to an outstanding woodwind student.

Louis Rocereto Memorial Scholarship is given to an outstanding junior studying a woodwind instrument.

Ezio Pinza Memorial Scholarship. This award of \$1,000 is presented to an outstanding vocal student, male or female, between the ages of 17 and 25 who has not yet completed an undergraduate degree.

TEACHER CERTIFICATION

All undergraduate programs have been approved by the Pennsylvania Department of Education for the issuance of the Instructional I (Provisional) Certificate. Application for the certificate must be made in the semester in which the student plans to graduate.

RECITAL ATTENDANCE

Students are required to attend 75 percent of the recitals and concerts sponsored by the School of Music. While attendance at all events is encouraged, the number need not exceed 25 a year.

THEOLOGY REQUIREMENT

One, three-credit course in theology is required of every Roman Catholic student.

PROGRAMS

Students' interests are served and their abilities furthered through their selection from among seven different programs, four in applied music, two in music education, and one in sacred music.

BACHELOR OF MUSIC—MAJOR IN PIANO

			Freshman Year	
			<i>Credits</i>	
<i>Courses</i>			<i>Fall</i>	<i>Spring</i>
¹ Mus.	103,104	Applied Music (Piano)	4	4
Mus.	111,112	Applied Music Minor	1	1
Mus.	131,132	Theory	2	2
Mus.	133,134	Solfeggio	2	2
Mus.	143,144	Ensemble: Chorus	1	1
Mus.	121,122	Physical Education (Eurhythmics)	2	2
Eng.	101,102	English Composition	3	3
			Sophomore Year	
¹ Mus.	203,204	Applied Music (Piano)	4	4
Mus.	211,212	Applied Music Minor	1	1
Mus.	231,232	Theory	2	2
Mus.	233,234	Solfeggio	2	2
Mus.	243,244	Ensemble: Chorus	1	1
Mus.	251,252	Music and Western Civilization	3	3
Mus.	241,242	Chamber Music	2	2
			Junior Year	
¹ Mus.	303,304	Applied Music (Piano)	4	4
Mus.	351,352	Music and Western Civilization	3	3
Mus.	343,344	Ensemble: Chorus <i>or</i>	1	1
	347,348	Small Ensemble	(1)	(1)
Mus.	335,336	Counterpoint	2	2
Mus.	341,342	Chamber Music	2	2
Mus.	191	Human Physiology <i>or</i>	3	(3)
Mus.	253	Visual Arts <i>or</i>		(3)
Elective		Academic		(3)
			Senior Year	
¹ Mus.	403,404	Applied Music (Piano)	5	5
¹ Elective		Academic or Theology	3	(3)
Mus.	491	Physical Science (Acoustics)		3
² Mus.	313,314	Piano Methods	2	2
Mus.	441,442	Chamber Music	2	2
Mus.	443,444	Ensemble: Chorus <i>or</i>	1	1
	447,448	Small Ensemble	(1)	(1)
Mus.	340	Orchestration	(2)	2
Mus.	379	Conducting	2	(2)

¹ Includes performance classes required by the piano department.

² If 313, 314 Piano Methods is offered in the student's junior year it should be taken, and counterpoint should be taken in the senior year.

BACHELOR OF MUSIC—MAJOR IN ORGAN

<i>Courses</i>	Freshman Year		<i>Credits</i>	
			<i>Fall</i>	<i>Spring</i>
¹ Mus. 103,104	Applied Music (Organ)	.....	4	4
Mus. 111,112	Applied Music Minor (Piano)	.....	1	1
Mus. 131,132	Theory	.....	2	2
Mus. 133,134	Solfeggio	.....	2	2
Mus. 143,144	Ensemble: Chorus	.....	1	1
Mus. 121,122	Physical Education (Eurhythmics)	.....	2	2
Eng. 101,102	English Composition	.....	3	3
Sophomore Year				
¹ Mus. 204,204	Applied Music (Organ)	.....	4	4
Mus. 211,212	Applied Music Minor (Piano)	.....	1	1
Mus. 231,232	Theory	.....	2	2
Mus. 233,234	Solfeggio	.....	2	2
Mus. 185,186	Voice Class	.....	2	2
Mus. 243,244	Ensemble: Chorus	.....	1	1
Mus. 251,252	Music and Western Civilization	.....	3	3
Junior Year				
¹ Mus. 303,304	Applied Music (Organ)	.....	4	4
Mus. 351,352	Music and Western Civilization	.....	3	3
Mus. 343,344	Ensemble: Chorus <i>or</i>	.....	1	1
	347,348 Small Ensemble	.....	(1)	(1)
Mus. 335,336	Counterpoint	.....	2	2
Mus. 340	Orchestration	.....	2	(2)
Mus. 379	Conducting	.....	(2)	2
Mus. 191	Human Physiology <i>or</i>	.....	3	(3)
Mus. 253	Visual Arts <i>or</i>	.....		(3)
Elective	Academic	.....		(3)
Senior Year				
¹ Mus. 403,404	Applied Music (Organ)	.....	6	6
Elective	Academic or Theology	.....	3	(3)
Mus. 491	Physical Science (Acoustics)	.....		3
Mus. 431,432	Improvisation	.....	1	1
² Mus. 452	Organ Literature	.....	2	
Mus. ()	Elective	.....		2
Mus. 438,439	Composition	.....	2	2
Mus. 443,444	Ensemble: Chorus <i>or</i>	.....	1	1
	447,448 Small Ensemble	.....	(1)	(1)

¹ Includes performance classes required by the organ department.² If 452 Organ Literature is offered in the student's junior year it should be taken, and counterpoint should be taken in the senior year.

BACHELOR OF MUSIC—MAJOR IN VOICE

<i>Courses</i>	Freshman Year		<i>Credits</i>	
			<i>Fall</i>	<i>Spring</i>
¹ Mus.	109,110	Applied Music (Voice)	3	3
Mus.	111,112	Applied Music Minor (Piano)	1	1
Mus.	131,132	Theory	2	2
Mus.	133,134	Solfeggio	3	2
Mus.	143,144	Ensemble: Chorus	1	1
Mus.	121,122	Physical Education (Eurhythmics)	2	2
Eng.	101,102	English Composition	3	3
Mus.	193,194	Italian Diction	1	1
Sophomore Year				
¹ Mus.	203,204	Applied Music (Voice)	3	3
Mus.	211,212	Applied Music Minor (Piano)	1	1
Mus.	231,232	Theory	2	1
Mus.	233,234	Solfeggio	2	2
Mus.	251,252	Music and Western Civilization	3	3
Fr.	101,102	Elementary French	3	3
Mus.	243,244	Ensemble: Chorus	1	1
Junior Year				
¹ Mus.	303,304	Applied Music (Voice)	4	4
Mus.	311,312	Applied Music Minor (Piano)	1	1
Mus.	351,352	Music and Western Civilization	3	3
Ger.	101,102	Elementary German	3	3
Mus.	335,336	Counterpoint	2	2
Mus.	349,350	Vocal Repertoire	1	1
Mus.	343,344	Ensemble: Chorus <i>or</i>	1	1
	347,348	Small Ensemble	(1)	(1)
Senior Year				
¹ Mus.	403,404	Applied Music (Voice)	6	6
Mus.	191	Human Physiology <i>or</i>	3	(3)
Mus.	253	Visual Arts <i>or</i>		(3)
Elective		Academic or Theology		(3)
Mus.	449,450	Voical Repertoire	1	1
Mus.	() ()	Music Electives	2	2
Mus.	379	Conducting	2	(2)
Mus.	340	Orchestration.	(2)	2
Mus.	443,444	Ensemble: Chorus <i>or</i>	1	1
	447,448	Small Ensemble	(1)	(1)

¹ Includes performance classes required by the voice department.

BACHELOR OF MUSIC—MAJOR IN ORCHESTRAL INSTRUMENT

<i>Courses</i>	Freshman Year		<i>Credits</i>	
			<i>Fall</i>	<i>Spring</i>
¹ Mus.	103,104	Applied Music (Instrument)	3	3
Mus.	111,112	Applied Music Minor (Piano)	1	1
Mus.	131,132	Theory	2	2
Mus.	133,134	Solfeggio	2	2
Mus.	143,144	Ensemble: Orchestra or Band	1	1
Mus.	121,122	Physical Education (Eurhythmics)	2	2
Eng.	101,102	English Composition	3	3
Mus.	141,142	Chamber Music	1	1
Sophomore Year				
¹ Mus.	203,204	Applied Music (Instrument)	4	4
Mus.	211,212	Applied Music Minor (Piano)	1	1
Mus.	231,232	Theory	2	2
Mus.	233,234	Solfeggio	2	2
Mus.	243,244	Ensemble: Orchestra or Band	1	1
Mus.	251,252	Music and Western Civilization	3	3
Mus.	241,242	Chamber Music	2	2
Junior Year				
¹ Mus.	303,304	Applied Music (Instrument)	4	4
Mus.	335,336	Counterpoint	2	2
Mus.	351,352	Music and Western Civilization	3	3
Mus.	341,342	Chamber Music	2	2
Mus.	343,344	Ensemble: Orchestra or Band <i>or</i>	1	1
	347,348	Small Ensemble	(1)	(1)
Electives	() ()	Academic	3	3
Senior Year				
¹ Mus.	403,404	Applied Music (Instrument)	5	5
Mus.	438,439	Composition	2	2
Mus.	443,444	Ensemble: Orchestra or Band <i>or</i>	1	1
	447,448	Small Ensemble	(1)	(1)
Mus.	191	Human Physiology <i>or</i>	3	(3)
Mus.	253	Visual Arts <i>or</i>		(3)
Elective		Academic or Theology		(3)
Mus.	491	Physical Science (Acoustics)		3
Mus.	379	Conducting	2	(2)
Mus.	340	Orchestration	(2)	2
Mus.	441,442	Chamber Music	2	2

¹ Includes performance classes required by individual departments.

BACHELOR OF SCIENCE IN MUSIC EDUCATION

<i>Courses</i>			<i>Credits</i>	
			<i>Fall</i>	<i>Spring</i>
Freshman Year				
Eng.	101,102	English Composition	3	3
Mus.	131,132	Theory	2	2
Mus.	133,134	Solfeggio	2	2
Mus.	181,182	Woodwind Class Methods (Instrumental majors will enroll for 183, 184)	2	2
¹ Mus.	101,102	Applied Music Major	2	2
² Mus.	111,112	Applied Music Minor (Piano)	1	1
Mus.	121,122	Physical Education (Eurhythmics)	2	2
Mus.	143,144	Ensemble	1	1
Sophomore Year				
Mus.	231,232	Theory	2	2
Mus.	233,234	Solfeggio	2	2
Mus.	185,186	Voice Class	2	2
³ Mus.	213,214	Piano Class	1	1
Mus.	251,252	Music and Western Civilization	3	3
Mus.	281,282	Brass Class Methods (Instrumental majors will enroll for 283, 284)	2	2
¹ Mus.	201,202	Applied Music Major	2	2
⁴ Mus.	211	Applied Music Minor	1	
⁴ Mus.	215	Piano Class		1
Mus.	243,244	Ensemble	1	1
Junior Year				
Psych.	103	Introduction to Psychology	3	(3)
Ed.	301	Foundations of Education <i>or</i>	(3)	3
Ed.	351	Educational Psychology <i>or</i>		(3)
Ed.	201	Child Development <i>or</i>		(3)
Ed.	202	Adolescent Development		(3)
Mus.	351,352	Music and Western Civilization	3	3
Mus.	381,382	String Class Methods	2	2
Mus.	340	Orchestration	2	(2)
Mus.	379	Conducting	(2)	2
Mus.	383	Elementary Methods	2	(2)
Mus.	384	Secondary Methods	(2)	2
¹ Mus.	301,302	Applied Music Major	2	2
Mus.	343,344	Ensemble <i>or</i>	1	1
	347,348	Small Ensemble	(1)	(1)
Senior Year				
Mus.	191	Human Physiology	3	(3)
Elective		Academic <i>or</i> Theology	(3)	3
Mus.	491	Physical Science (Acoustics)		3
Mus.	253	Visual Arts	3	(3)
Mus.	387	Marching Band Methods <i>or</i>	1	(1)
Mus.	385	Choral Methods		
Mus.	492	Creative Personality <i>or</i>	3	(3)

Elective		Academic		
Mus.	481	Percussion Class Methods	2	(2)
¹ Mus.	401,402	Applied Music Major	2	2
Mus.	443,444	Ensemble <i>or</i>	1	1
	447,448	Small Ensemble	(1)	(1)
Mus.	490	Student Teaching	(6)	6

See footnotes following Music Therapy Curriculum.

BACHELOR OF SCIENCE IN MUSIC EDUCATION—MAJOR IN MUSIC THERAPY

		Freshman Year		Credits	
<i>Courses</i>				<i>Fall</i>	<i>Spring</i>
Eng.	101,102	English Composition	3	3	
Mus.	131,132	Music Theory	2	2	
Mus.	133,134	Solfeggio	2	2	
Mus.	101,102	Applied Music Major	2	2	
Mus.	111,112	Applied Music Minor	1	1	
Mus.	107	Music Therapy Orientation	2		
Mus.	124	Music Therapy Practicum I			1
Soc.	101	Survey of Sociology	3		
Mus.	121,122	Physical Education (Eurhythmics)	2	2	
Mus.	143,144	Ensemble	1	1	
		Sophomore Year			
Mus.	185,186	Voice Class	2	2	
Mus.	231,232	Music Theory	2	2	
Mus.	233,234	Solfeggio	2	2	
Mus.	252	Music and Western Civilization			3
Mus.	181	Woodwind Class Methods (for voice, piano, organ majors)	2		
Mus.	183	Woodwind Class Methods (for instrumental majors)	2		
⁵ Elective		Sociology	3		
Mus.	223,224	Music Therapy Practicum II, III	1	1	
Mus.	108	Music in Therapy			2
Mus.	201,202	Applied Music Major	2	2	
Mus.	213,214	Class Piano	1	1	
Mus.	243,244	Ensemble	1	1	
		Junior Year			
Psych.	103	Introduction to Psychology			3
Mus.	351,352	Music and Western Civilization	3	3	
Mus.	381	String Class Methods	2		
Mus.	281	Brass Class Methods (for voice, piano, organ majors)			2
Mus.	283	Brass Class Methods (for instrumental majors)			2

⁵ Electives		Psychology, sociology, special education	3	3
Ed.	002	Drug Abuse	1	
Mus.	308	Influence of Music on Behavior	2	
Mus.		Applied Music	2	2
Mus.	323,324	Music Therapy Practicum IV, V	1	1
Mus.	343,344	Ensemble	1	1

Senior Year

⁵ Psychology		Elective		3
Mus.	481	Percussion Class Methods	2	
Psych.	352	Abnormal Psychology	3	
Mus.	191	Human Physiology	3	
Mus.	491	Physical Science (A) ⁶		3
Mus.	307	Psychology of Music (A)	2	
Mus.	600	Psychology of Music (B)	2	
Mus.	309	Directed Study in Music Therapy (B)		2
Mus.	379	Conducting	2	
Mus.	423,424	Music Therapy Practicum VI, VII	2	2
Mus.	340	Orchestration	2	
Mus.		Applied Music	2	2
Mus.	310	Recreational Instruments		1
Mus.	443,444	Ensemble	1	1
Elective		Academic or Theology	3	

¹ Includes performance classes required by individual departments.
² Piano Majors in Music Education select another instrument or voice for their Applied Music Minor. They also continue with the Applied Music Minor 211. (Organ Majors are required to select piano as their secondary instrument.)
³ For Orchestral Instrument and Voice Majors only.
⁴ For Piano and Organ Majors only.
⁵ Electives in psychology, sociology, and special education will be selected following consultation with advisor.
⁶ Take either Series A or B.

BACHELOR OF MUSIC IN SACRED MUSIC—MAJOR IN ORGAN

Freshman Year			Credits	
Courses			Fall	Spring
Mus.	101,102	Applied Music (Organ)	2	2
Mus.	111,112	Applied Music (Piano)	1	1
Mus.	131,132	Theory	2	2
Mus.	133,134	Solfeggio	2	2
Mus.	143,144	Ensemble (Chorus)	1	1
Mus.	121,122	Eurhythmics	2	2
Eng.	101,102	English Composition I, II	3	3
Theo.	213,214	Old and New Testament	3	3

Sophomore Year

Mus.	201,202	Applied Music (Organ)	2	2
Mus.	211,212	Applied Music (Piano)	1	1
Mus.	231,232	Theory	2	2
Mus.	233,234	Solfeggio	2	2
Mus.	311,312	Applied Music (Voice)	1	1
Mus.	243, 244	Ensemble (Chorus)	1	1
Mus.	251,252	Music and Western Civilization	3	3
Theology		Liturgics	3	3

Junior Year

Mus.	301,302	Applied Music (Organ)	2	2
Mus.	411	Applied Music (Voice)	1	
Mus.		Children's Choirs		1
Mus.	351,352	Music and Western Civilization	3	3
Mus.	343,344	Ensemble	1	1
Mus.	335,336	Counterpoint	2	2
Mus.	340	Orchestration		2
Mus.		Sacred Choral Literature	2	
Electives		Electives	3	3

Senior Year

Mus.	401,402	Applied Music (Organ)	2	2
Mus.	431,432	Organ Improvisation	2	2
Mus.	451,452	Organ Literature	2	2
Mus.	443,444	Ensemble	1	1
Mus.		Choral Conducting and Methods	2	2
Mus.		Gregorian Chant	2	
Mus.		Hymnody		2
Mus.		Organ Design and Maintenance		2
Mus.		Church Music Administration	2	
Mus.		Music Elective	2	
Mus.		Recital		2

COURSE DESCRIPTIONS**APPLIED MUSIC**

101, 102, 201, 202, 301,

302, 401, 402. APPLIED MUSIC

MAJOR FOR THE BACHELOR OF
SCIENCE IN MUSIC

EDUCATION.

2 cr. each

The study of voice, piano, organ, string, wind, or percussion instruments throughout all semesters. The university reserves the right to give equivalent instruction by way of private and class lessons should it seem to the students' advantage to do so.

103, 104, 109, 110, 203, 204,
303, 304, 403, 404. APPLIED
MUSIC MAJOR FOR THE
BACHELOR OF MUSIC.

Var cr.

Private study of voice, piano, organ, string, wind, or percussion instruments throughout all semesters. Credits are distributed according to departmental curricula.

The candidate for the Bachelor of Music degree must give a recital during the senior year. The recital will be presented to a faculty committee for approval at least one month prior to the date of the performance.

111, 112, 211, 212, 311, 312,

411, 412. APPLIED MUSIC MINOR

FOR ALL BACHELOR DEGREES. 1 cr. each

All students must choose an applied music minor upon entrance. Those students who do not elect piano as a major must study it as a secondary instrument.

Students not majoring in piano must satisfy the following piano requirements before graduation: (a) construct and play with facility major and minor scales and cadences in all keys;

(b) read simple four-part music; (c) play a simple Clementi Sonatina and excerpts from Schumann's "Album for the Young," or their equivalent. A student majoring in piano or organ will select an applied music minor with the guidance of his advisor. Students who fail to meet the minimum requirements in the time allotted for their particular degree must continue study until the requirements have been fulfilled.

Transfer of Applied Music Credit. Transfer credit in the undergraduate Applied Music program can be granted only after the student's proficiency has been evaluated by a faculty panel in the student's area of specialization.

Changing Assigned Applied Music Teacher. Changes in assigned teachers can become effective only at the beginning of a new semester and cannot be accomplished while a semester is in progress. The student must discuss the feasibility of a proposed change with the appropriate department chairman.

BACHELOR OF MUSIC

Bassoon

103, 104. 3 cr. each

Scales and arpeggios in all keys; Kovar scales, five note studies and interval studies; selected studies and Weissenborn and Milde; solos by Weissenborn, Foret and Mouquet.

203, 204. 4 cr. each

Continue scales and arpeggios; Kovar technical studies; Oubradous, Scales and Daily Drills; Milde, Concert Studies; Handel, Sonata in C minor; solos by Bozza and Vidal.

303, 304. 4 cr. each

Oubradous, Scales and Daily Drills; Milde, Concert Studies; Orefici, Bravura Studies; selected passages from the Bach Cantatas; Mozart Concerto in B flat; Beethoven Quintet; representative contemporary solos; orchestra studies.

403, 404. 5 cr. each

Gambara, Etudes for Bassoon; Bozza, Fifteen Daily Studies; Sonatas by Hindemith and Saint-Saens; orchestral and chamber music studies; Bozza, Concertino: the contra bassoon.

Clarinet

103, 104. 3 cr. each

Scales and arpeggios in various articulations;

Langenus, Scale Studies; Rose, Forty Studies; Cavallini, Thirty Caprices; Weber, Fantasy; Le Fevre, Fantasia Caprice.

203, 204. 4 cr. each

Scales and arpeggios continued; Rose, Twenty Studies after Rode; Jeanjean, Twenty-five Etudes; Weber Concertos; Mozart, Quintet for Clarinet and Strings; orchestral studies.

303, 304. 4 cr. each

Scales and arpeggios continued; Jeanjean, Eighteen Etudes; Labanchi Studies; Brahms sonatas and Quintet for Clarinet and Strings; representative contemporary solos; orchestra studies.

403, 404. 5 cr. each

Jeanjean, Sixteen Modern Studies; Perrier, Vingt-deux Etudes Modernes; Spohr Concerto; Debussy, Premier Rhapsodie; representative contemporary solos and sonatas.

Double Bass

103, 104. 3 cr. each

Scales and intervals in all keys. Simandl, Thirty Etudes. Selected pieces. Orchestral studies.

203, 204. 4 cr. each

Hrabe, Eighty-six Etudes. Short pieces by Koussevitsky and Bottesini. Orchestral studies.

303, 304. 4 cr. each
Nanny, Etudes de Kreutzer et de Fiorillo; concertos by Koussevitsky, Dittersdory and Bottesini, Orchestral studies.

403, 404. 5 cr. each
Nanny, Dix Etudes Caprices; Storch, Twenty Concert Etudes; concertos by Koussevitsky and Dragonetti; Orchestral studies.

Flute

103, 104. 3 cr. each
Analysis of student's playing and basic corrections if necessary. Taffanel-Gaubert, scales, scales in thirds, trills. Selected studies by Berbiguier; Anderson, Etudes Op. 33 and 37; Boehm-Wummer, Caprices Op. 26; Kuhlau, Duets, Op. 10. Sonatas of the Baroque Period. Solos by Doppler, Chaminade, Mozart, Moyse; Three Grand Solos Op. 57 by Kuhlau.

203, 204. 4 cr. each
Taffanel-Gaubert Scales, scales in thirds and sixths, chromatic scales, arpeggios and trills. Anderson, Etudes Op. 21; Hughes, 40 New Studies; Moyse, De la Sonorite. The Modern Gradus and Parnassum. Selected duets by Kuhlau, Koechlin and Rivier; concertos by Haydn and Mozart; sonatas by LeClair, J. S. Bach and W. F. Bach; solos by Faure, Debussy, and Gaubert.

303, 304. 4 cr. each
Continue scale study; Taffanel-Gaubert, Progressive Studies; Barrere, The Flutists Formulae; Anderson, Etudes Op. 30; Altes-Barrere, 26 Selected Studies; Moyse, Etudes et Exercises Techniques; Torchio-Wummer, Orchestral Studies. Bach, b minor Suite, Sonatas and arias from the religious works. Arrieu, Sonatine; Gaubert, Sonata No. 2; Telemann, Suite in a minor. Solos by Hue, Enesco, Griffes, Gaubert, and Varese.

403, 404. 5 cr. each
Taffanel-Gaubert Scales, the half note equals MM 120; scales in thirds, sixths, octaves and tenths; Moyse, De la Sonorite, Mechanism and Chromatics; Anderson, Etudes Artistiques Op. 15, including the memorization of certain selected studies; Anderson Op. 63; Jeanjean, Etudes Modernes; Orchestral Studies; Bach, Sonata in A minor for unaccompanied flute;

sonatas by Hindemith, Reinecke; Concerto by Ibert; works by representative contemporary composers.

Guitar

Information and course content in preparation.

Harp

103, 104. 3 cr. each
Lariviere Exercises and technical studies. Standard orchestra parts. Bochsas Etudes opus 318, Book II. Pieces grade of difficulty of: Grandjany, Aria in Classic Style; Tournier, Images (Suite I); Saint-Saens, Fantasia.

203, 204. 4 cr. each
Technical studies. Bochsas Etudes, opus 62. Standard orchestra cadenzas. Pieces of grade difficulty of: Tournier, Feerie; Rousseau, Variations Pastorales; Grandjany, Fantasia on a Theme of Haydn.

303, 304. 4 cr. each
Technical studies. Orchestra parts. Bochsas Etudes, opus 34. Pieces grade of difficulty of: Hindemith, Sonata; Handel, Concerto in Bb major; Ravel, Introduction and Allegro.

403, 404. 5 cr. each
Technical studies. Pieces grade of difficulty of: Faure Impromptu; C.P.E. Bach, Sonata; Salzedo, Scintillation; Debussy, Danses Sacre et Profane.

Horn

103, 104. 3 cr. each
Scales and arpeggios in all keys; review of fundamentals of tone production; Alphonse, Deux Cents Etudes Nouvelles; Gallay, Thirty Studies; review of muting and trill technic; Dubois, Cavatine; Franz Strauss, Concerto.

203, 204. 4 cr. each
Alphonse, Deux Cents Etudes Nouvelles; Kopprasch Studies; Strauss, Seventeen Concert Studies; Chabrier, Larghetto; Mozart, concertos, orchestral studies.

303, 304. 4 cr. each
Alphonse, Deux Cents Etudes, Nouvelles; Kopprasch Studies; Gallay, Twelve Caprices; Beethoven Sonata; Mozart, Concert Rondo; orchestral studies.

403, 404. 5 cr. each
Alphonse, Deux Cents Etudes Nouvelles; Studies by Kopprasch and Galla; R. Strauss, Concerto; Saint-Saens, Morceau de concert; Schumann, Adagio and Allegro; Dukas, Villanelle; orchestral studies.

Oboe

103, 104. 3 cr. each
Review of basic technic; Barret Studies; Andraud, Vade Mecum; scales and arpeggios in all keys; Telemann, Sonata in A minor; solos by Schumann, Handel and Bach.

203, 204. 4 cr. each
Continue scales and arpeggios including scales in thirds and measured trills; Barret, Grand Etudes and Duets; Andraud, Vade Mecum; Bleuzet, selected studies from Technique of the Oboe; Handel sonatas; Marcello Concerto.

303, 304. 4 cr. each
Continue scales and arpeggios; Bleuzet, selected studies for range and endurance; orchestral studies; Cimarosa, Concerto; Paris Conservatory solos; representative contemporary compositions.

403, 404. 5 cr. each
Blauzet, Technique of the Oboe; scales in all articulations, scales in groups of five and seven, scales by interval, arpeggios and broken arpeggios; orchestral studies including the works of J. S. Bach; sonatas by Telemann and Hindemith; solos by Busser, Jolivet, Rivier; Mozart Concerto, Symphonie Concertante and Quartet; Concerto by Goosens; contemporary solos.

Organ

103, 104. 4 cr. each
Gleason, Method of Organ Playing; Stanley, Voluntaries; Franck, L'Organiste; Vierne, 24 Pieces; Dupre, Chorale Preludes; Pachebel, Fugues on the Magnificat. Selected compositions by Gabrieli, Frescobaldi, Buxtehude, Bruhns, Bohm and Couperin; Bach, Orgelbuchlein selections; Eight Short Preludes and Fugues, Little Fugue in G minor and Cathedral Prelude and Fugue. Hymn playing, transposition, modulations to closely related keys, counterpoint.

203, 204. 4 cr. each
Brahms, Chorale Preludes; Mendelssohn, Schumann, Hindemith, Sonatas; Jenkins, Six Pieces; Dupre, Antiphons; Messiaen, La Banquet Celeste or Ascension Suite, movements 1 or 4; Langlais; Franck, Cantabile or Prelude, Fugue and Variation; Schroeder or Pepping, Vierne, Pieces de Fantaisie; Bach, Orgelbuchlein; Trio Sonata, Concerti, Prelude and Fugue in G Major, D minor, C minor, F minor; Schubler Chorales. Hymn playing, keyboard harmony, modulations to all keys, counterpoint.

303, 304. 4 cr. each
D'Aquin, Clerambault, deGrigny, Handel, Concerti, Franck, Fantaisies, Piece Herioque, Sowerby and contemporary American selections; Mozart, Seelinck; Bach, 18 Great Chorales, Toccata, Adagio and Fugue, Prelude and Fugue in A minor, D major, Orgelbuchlein. Hymn playing, free harmonizations, keyboard harmony and counterpoint, anthem accompaniment.

403, 404. 6 cr. each
Franck, Chorales, Messiaen, Nativite, Lizst, Dupre, Preludes and Fugues; Durufle, Langlais, Vierne and Widor, Symphonies; Alain, Tour-nemire, selected works by contemporary composers. Bach, Passacaglia and Fugue, Prelude and Fugue in B minor, E minor, G minor. Clavierbung, Part III. Conducting from the console, accompaniment of larger choral works, improvisation.

Percussion

103, 104. 3 cr. each
Fundamental snare drum technique and its application to musical notation, exercises in rhythm phrasing, control. Elements of tympani technique, their application to classical literature, tuning. Rudimentary xylophone technique: scales, arpeggios, forms.

203, 204. 4 cr. each
Advanced snare drum studies, repertoire. Three and four tympani exercises, orchestral literature. Intermediate xylophone studies, transcriptions for solo.

303, 304. **4 cr. each**
Tympani study through romantic and contemporary literature. Advanced xylophone exercises, transcriptions. Latin American instrumental techniques; use of special accessories in late 19th and 20th century literature. Repertoire in all instruments.

403, 404. **5 cr. each**
Examination of representative solo material for all percussion instruments, preparation of solo for recital.

Piano

103, 104. **4 cr. each**
Bach, Three Part Inventions; Haydn and Mozart, selected sonatas; Beethoven, Op. 10 and Op. 14; Chopin waltzes, mazurkas, nocturnes; selections from modern repertoire. All major and minor scales in different rhythms and tempi, dominant and diminished seventh arpeggios.

203, 204. **4 cr. each**
Scarlatti, selected sonatas; Bach, selections from Well-Tempered Clavier; Beethoven, Op. 22, Op. 31; Chopin, preludes, impromptus, and nocturnes; Brahms, rhapsodies; selections from contemporary repertoire. Continue scales and arpeggios.

303, 304. **4 cr. each**
Bach, Suites, Partitas, Well-Tempered Clavier; Beethoven, sonatas of the difficulty of Op. 10 No. 3; Chopin, Scherzi, Ballades, and Etudes; Schumann, Fantasiestücke; Debussy, Preludes; Selections from contemporary piano literature. Continue scales and arpeggios.

313. PIANO METHODS I. **2 cr.**
Students will become acquainted with the techniques and materials for teaching piano at the elementary level. For piano majors; junior standing is required.

314. PIANO METHODS II. **2 cr.**
A continuation of 313 concentrating on the techniques and materials for teaching piano at the intermediate and advanced levels.

403, 404. **5 cr. each**
Bach, Suites, Partitas, Toccatas, Well-Tempered Clavier; Beethoven sonatas from middle and

late periods; more extensive compositions from the Romantic Period; Ravel, *Jeux d'eau*; at least one work selected from the standard concerto literature; contemporary literature.

Saxophone

103, 104. **3 cr. each**
Mule, Scales and Arpeggios; Small, 27 Melodious and Rhythmic Exercises; Labanchi-Iasilli, 33 Concert Etudes, Vol. I; Concertino by Muilhaud.

203, 204. **4 cr. each**
Mule, Scales and Arpeggios Vol. II, Lamotte, 18 Studies for Saxophone; Salviani-Iasilli, Exercises in All the Practical Keys; Guillon, Sontaine; Glazounov, Concerto.

303, 304. **4 cr. each**
Mule, Scales and Arpeggios Vol. III; Left, 24 Etudes; Capella, 20 Grand Etudes; Bozza, 12 Etudes; Bozza, Concertino; Ibert, Concertino.

403, 404. **5 cr. each.**
Rascher, Top Tones and Four Octave Studies; Mule, 53 Studies; Loyon, Thirty-two Studies; Moritz, Concerto; Contemporary solos, orchestra studies.

Trombone and Baritone Horn

103, 104. **3 cr. each**
Scales and arpeggios in all keys; Studies by Cimera; Stacey, Lip Studies; Arban, Complete Method for Trombone; Blume Studies Vol. I; Rochut, Melodious Studies Vol. I; La Fosse, Sight Reading Studies.

203, 204. **4 cr. each**
Scales and arpeggios in all keys; Stacey, Lip Flexibility, Arban, Complete Method for Trombone; Intensive study of tonguing (single, double and triple); La Fosse, Sight Reading Studies; Rochut, Melodious Studies Vol. II; Blume Studies Vol. II; Kopprasch Studies Vol. I; study of tenor clef; Guilmant, *Morceau Symphonique*; Ropartz, *Andante* and *Allegro*; orchestral and band studies.

303, 304. **4 cr. each**
Gaetke, Daily Lip and Tongue Exercises; Gaetke, Scales and Arpeggios; Rochut Melodious Studies Vol. III; Blume Studies Vol.

III; Kopprasch Studies Vol. II; Blazhevich, Clef Studies; Bach Cello Suites transcribed for Trombone; Blazhevich, Concert Duets; Sanders Sonata; Galliard, Six Sonatas; orchestral and band studies.

403, 404. 5 cr. each
Gaetke, Lip Flexibility; La Fosse, Complete Method for Trombone; Blazhevich, 26 Sequences in Bass, Tenor and Alto Clefs; Rimsky-Korsakoff, Concert; Hindemith Sonata; Grondahl, Concerto; Blazhevich, Concerto No. 2; orchestral studies; study of bass trombone.

Trumpet

103, 104. 3 cr. each
Schlossberg, Daily Drills; Arban, Complete Method for Trumpet; Sachse, One Hundred Etudes; Brandt, Orchestral Studies; D'Ollone, Solo de Trompette; Videt Concertino.

203, 204. 4 cr. each
Schlossberg, Daily Drills; Sachse, One Hundred Etudes; Brandt, Orchestral Studies; Bousquet Studies; Enesco Concerto; Sowerby Sonata.

303, 304. 4 cr. each
Pietzsch Studies; Bousquet Studies; Brandt, Orchestral Studies; Hindemith, Sonata for Trumpet; Perischetti, The Hollow Men; Intrada by Honegger.

403, 404. 5 cr. each
Sauvuer, Techniques; Paudert, Sixty-two Exercises; Advanced Studies by Clarke, Liersering and others; Concertos by Haydn, Giannini, Bohtnstedt; Peeters Sonata; Orchestral Studies.

Tuba

103, 104. 3 cr. each
Scales and arpeggios in all keys; review of tone production; Rochut, Melodious Studies Vol. I; Blume Studies Vol. I; selected solos.

203, 204. 4 cr. each
Scales and arpeggios in all keys with various articulations; Rochut, Melodious Studies Vol. II; Blume Studies Vol. II; selected solos; orchestral and band studies.

303, 304. 4 cr. each
Rochut, Melodious Studies Vol. III; Blume Studies, Vol. III; Blazhevich, Seventy Etudes;

Eby, Bass Studies; selected solos; orchestral studies.

403, 404. 5 cr. each
Grigoriev, Tuba Studies, Bernard, Etudes and Exercises for Tuba; transcriptions of horn and violoncello literature; solos by Cimera, Barat, Schroen; orchestral literature.

Violin

103, 104. 3 cr. each
Scales and arpeggios in three octaves, two octaves scales in thirds, sixths, octaves, and tenths; Rode, Caprices; Wieniawski, Caprices; Mozart, Concerto No. 4; Vieux-temps, Fantasia Appassionato.

203, 204. 4 cr. each
Scales and arpeggios continued. Dont, Twenty-four Etudes; Mozart, Concerto No. 5; Wieniawski, Concerto No. 2; Bach, Sonatas for violin and clavier.

303, 304. 4 cr. each
Continue scales and arpeggios, add all possible four octave scales. Gaviniès, Twenty-four Matinees; Bruch, Concerto in D minor No. 2; Lalo, Symphonic Espagnole; sonatas by Beethoven and Brahms.

403, 404. 5 cr. each
Wieniawski, Ecole Moderne; Paganini, Caprices; Bach, solo sonatas and partitas; concertos by Beethoven, Brahms, Ernst, Elgar, and Prokofieff.

Viola

103, 104. 3 cr. each
Scales and arpeggios in three octaves, selected scales in thirds, sixths and octaves, Flesch, Scale Studies; Sevcik, Studies (Lifschev); Campagnoli, Forty-one Caprices, Fuchs, Twelve Caprices; Enesco, Concert Piece.

203, 204. 4 cr. each
All major and minor scales and arpeggios, scales in octaves, thirds, sixths, and tenths. Selected studies from Rode, Caprices; Hermann, Six Concert Studies Op. 18. Concertos by C.P.E. Bach, and Hoffmeister; Vaughan-Williams, Suite; Sonata by Milhaud; parts from orchestral and chamber music literature.

303, 304. **4 cr. each**
Continue scales and arpeggios. Selections from Rode, Caprices and Gavines, Twenty-four Matinees. Sonatas by Brahms and Creston. Viola parts from orchestral and chamber music literature.

403, 404. **5 cr. each**
Selected Studies from Paganini, Caprices; Reger, Three Suites; Bach, unaccompanied violin or violoncello works transcribed for viola; Bloch, Suite for Viola; concertos by Bartok, Walton, Porter.

Violoncello

103, 104. **3 cr. each**
Scales and arpeggios in three octaves with varied bowings. Dupont Studies; Franchomme, Twelve Caprices. Sonatas of Veracini, Locatelli, and Boccherini.

203, 204. **4 cr. each**
Scales and arpeggios in four octaves with varied bowings, scales in thirds, sixths and octaves, chromatic scales, and seventh chords. Franchomme, Twelve Caprices; Dupont, Etudes. Concertos by Romberg, Popper and Saint-Saens; sonatas by Boccherini and Haydn. Orchestral studies. Contemporary works.

303, 304. **4 cr. each**
Continue scales. Etudes by Servais and Piatti. Concertos by Davidoff, Dohnanyi, Lalo; Boellmann, Symphonic Variations; six solo sonatas of Bach. Orchestral Studies. Contemporary works.

403, 404. **5 cr. each**
Etudes by Servais, Piatti and Popper. Concertos by Haydn, Boccherini, Elgar, Barber; Schubert, Arpeggione Sonata. Contemporary solos and sonatas. Orchestral studies and chamber music literature.

Voice

109, 110. **3 cr. each**
Fundamentals of tone production and technical exercises to fit the needs of the student. Early Italian art songs and songs in English chosen for

the purity and simplicity of their line. Sight singing.

193, 194. ITALIAN DICTION. **1 cr. each**
Spoken and sung pronunciation of Italian for singers, with minimal emphasis on grammar.

203, 204. **3 cr. each**
Exercises to develop flexibility, range, and power. Early Italian art songs including more florid examples than used in the first year. Early Italian arias by Handel and Monteverdi; Oratorio arias by Bach, Handel, and Haydn; German lieder of Schubert and Schumann; French art songs of Faure and Duparc.

303, 304. **4 cr. each**
Operatic and oratorio materials chosen from the standard repertoire in French, German, Italian, and English; German lieder of Brahms, Wolf, and Strauss; French art songs of Chausson, Debussy, Faure, Hahn and Ravel.

403, 404. **6 cr. each**
Continued study of vocal literature chosen with special consideration for individual needs. All students must have at least one complete oratorio and one complete operatic role ready for performance before graduation. The student's repertoire should contain representative songs in Italian, French, German, and English, including significant examples of contemporary vocal literature.

**116, 117, 216, 217, 316,
317, 416, 417. OPERA
WORKSHOP.** **1 cr. each**

A performing class in which students learn standard and other opera repertory in English and the original languages. There is one major production each semester plus several outside performances.

349, 350, 449, 450.

VOCAL REPERTOIRE. **1 cr. each**
Study and performance of vocal solo and ensemble literature. Four semesters encompass Italian, German, French, and Contemporary (United States and Britain) music, with concentration on one category each semester.

BACHELOR OF SCIENCE IN MUSIC EDUCATION

Bassoon

101, 102. 2 cr. each
All scales and arpeggios; Weissenborn Op. 8 Vol. I; Milde Studies; Galliard, 6 Sonatas for Bassoon.

201, 202. 2 cr. each
Continue scales and arpeggios with various articulations; Weissenborn Op. 8 Vol. II; continue Milde Studies; Kovar Studies; Weinberger, Sonatine.

301, 302. 2 cr. each
Milde, Studies in All Keys; Jancourt, Grand Method Book II; Kavor Studies; solos by Marcello and Cools; orchestral studies.

401, 402. 2 cr. each
Selected studies from Milde, Concert Studies Vol. I; Telemann, Sonata; orchestral studies.

Clarinet

101, 102. 2 cr. each
Scales and arpeggios; Klose, Celebrated Method for Clarinet, Part II; Baerman, Method Book II; selected solos.

201, 202. 2 cr. each
Continue scales and arpeggios in various articulations; continue Klose Method; Rose, 32 Studies for Clarinet; Voxman, Duets; selected solos.

301, 302. 2 cr. each
Langenus, Scale Studies; continue Rose, 32 Studies; Klose, 20 Characteristic Studies; Weber, Fantasy and Rondo; orchestral and band studies.

401, 402. 2 cr. each
Continue Langenus, Scale Studies; Rose, 42 Studies; Polatchak, 12 Etudes for Clarinet; Mozart, Concerto in A; solos by Jeanjean; contemporary solos; orchestral studies.

Double Bass

101, 102. 2 cr. each
All positions up to thumb position; scales and intervals in all keys; Simandl, New Method for the Double Bass.

201, 202. 2 cr. each
Scales continued including thumb positions; Simandl Method continued; selected pieces.

301, 302. 2 cr. each
Scales and intervals continued; Simandl Method completed; Simandl, Thirty Etudes; selected pieces; violoncello sonatas by Marcello and others; orchestral studies.

401, 402. 2 cr. each
Simandl, Thirty Etudes; selected studies from Hrable, Eighty-six Etudes; pieces by Koussevitsky and others; orchestral studies.

Flute

101, 102. 2 cr. each
Kohler, Etudes Book I; Terschak Studies; Drouet, 25 Celebrated Etudes; scales and arpeggios in all keys; selected solos; Sonatas by Marcello, Handel, and Blavet.

201, 202. 2 cr. each
Continue scales and arpeggios; Drouet, 25 Celebrated Etudes; Anderson, Etudes Op. 47 selected solos from 19th century composers; Sonatas of Baroque composers.

301, 302. 2 cr. each
Anderson Etudes, Op. 33 and Op. 21; Taffanel-Gaubert, Daily Studies; all scales and arpeggios in various articulations; pieces by Anderson, Widor, Quantz; Handel sonatas.

401, 402. 2 cr. each
Anderson, Etudes Op. 30; Bergiguier, 18 Studies; Taffanel-Gaubert Scales, scales in thirds and in sixths, chromatic scales, arpeggios and trills; pieces by Quantz, Donjon, Thomasi, Ibert; sonatas by Handel, Telemann and Blavet; representative contemporary pieces.

Guitar

Information and course content in preparation.

Harp

101, 102. 2 cr. each
Lariviere Exercises and technical studies. Standard orchestra parts. Bochsá Etudes opus 318, Book II. Pieces grade of difficulty of: Grandjany, Aria in Classic style; Tournier, Images (Suite I); Saint-Saens, Fantasia.

201, 202. 2 cr. each
Technical studies. Bochs Etudes; opus 62. Standard orchestra cadenzas. Pieces grade of difficulty of: Tournier, Feerie; Rousseau, Variations Pastorales; Grandjany, Fantasia on a Theme of Haydn.

301, 302. 2 cr. each
Technical studies. Orchestra parts. Bochs Etudes, Opus 34. Pieces grade of difficulty of: Hindemith, Sonata; Handel, Concerto in Bb major; Ravel, Introduction and Allegro.

401, 402. 2 cr. each
Technical studies. Pieces grade of difficulty of: Faure, Impromptu; C.P.E. Bach, Sonata; Salzedo, Scintillation; Debussy, Danses Sacre et Profane.

Horn

101, 102. 2 cr. each
Fundamentals of tone production; scales and arpeggios in various articulations; chromatic scales; ability to read in at least two clefs; Mozart, Concerto No. 3; selected melodic material.

201, 202. 2 cr. each
Extend range of all scales and arpeggios; diminished seventh chords; muting and preparatory trill studies; ability to read in three or four clefs; Alphonse, Deux Cents Etudes Nouvelles Book II; selected solos, orchestral studies.

301, 302. 2 cr. each
Continue scales, arpeggios and other drills; Alphonse, Deux Cents Etudes Nouvelles Book III; selected studies from Kopprasch 60 Studies Book I; R. Strauss Concerto; orchestral studies.

401, 402. 2 cr. each
Continue scales, arpeggios and technical drills; Kopprasch, 60 Studies; Gallay, 30 Studies; solos by Mozart, Godard, Corelli; representative contemporary solos, orchestral studies.

Oboe

101, 102. 2 cr. each
Review of previous work by student and corrective exercises as necessary; scales and arpeggios; Barret, Exercises in Articulation and Progressive Melodies; selected solos.

201, 202. 2 cr. each
Scales and arpeggios in all keys; continue Barret; selected studies from Bleuzet, Technique of the Oboe Vol. I; solos by Handel and Schumann.

301, 302. 2 cr. each
Barret, Progressive Exercises, Bleuzet, Technique of the Oboe Vol. II; continue scales and arpeggios in various articulations; Handel sonatas; orchestral studies; contemporary solos; reed making.

401, 402. 2 cr. each
Barret, Etudes; selected etudes by Ferling; continue scales and arpeggios; solos by Bach and Handel; contemporary solos.

Organ

101, 102. 2 cr. each
Gleason, Method of Organ Playing; Stanley, Voluntaries; Franck, L'Organiste; Vierne, 24 Pieces; Dupre, Chorale Preludes; Pachelbel, Fugues on the Magnificat. Selected compositions by Gabrieli, Frescobaldi, Buxtehude, Bruhns, Bohm and Couperin; Bach, Orgelbuchlein selections; Eight Short Preludes and Fugues, Little Fugue in G minor and Cathedral Prelude and Fugue. Hymn playing, transposition, modulations to closely related keys, counterpoint.

201, 202. 2 cr. each
Brahms, Chorale Preludes; Mendelssohn, Schumann, Hindemith, Sonatas; Jenkins, Six Pieces; Dupre, Antiphons; Messiaen, Le Banquet Celeste or Ascension Suite, movements 1 or 4; Langlais; Franck, Cantabile or Prelude; Fugue and Variation; Schroeder or Pepping, Vierne, Pieces de Fantaisie; Bach, Orgelbuchlein; Trio Sonata, Concerti, Prelude and Fugue in G Major, D minor, C minor, F minor, Schubler Chorales. Hymn playing, keyboard harmony, modulations to all keys, counterpoint.

301, 302. 2 cr. each
D'Aquin, Clerambault, deGrigny, Handel, Concerti, Franck, Fantaisies, Piece Herioque. Sowerby and contemporary American selections; Mozart, Sweelinck; Bach, 18 Great Chorales, Toccata, Adagio and Fugue, Prelude

and Fugue in A minor, D major, Orgelbuchlein. Hymn playing, free harmonizations, keyboard harmony and counterpoint, anthem accompaniment.

401, 402. **2 cr. each**
 Franck, Chorales, Messiaen, Nativite, Lizst, Dupre, Preludes and Fugues; Durufle, Langlais, Vierne and Widor, Symphonies; Alain, Tour-nemire, selected works by contemporary composers. Bach, Passacaglia and Fugue, Prelude and Fugue in B minor, E minor, G minor. Clavierbung, Part III. Conducting from the console, accompaniment of larger choral works, improvisation.

431, 432. IMPROVISATION. **Var. cr.**
 A practical application of the basic tools of improvisation including harmonization of melodies at the organ; two and three part counterpoint, short ABA forms and chorale preludes with emphasis on their liturgical application.

Percussion

101, 102. **2 cr. each**
 Rudimentary snare drum technique, analysis of existing methods. Elementary tympani technique, uses of tympani in classical literature, tuning.

201, 202. **2 cr. each**
 Intermediate snare drum studies, elementary xylophone technique. Intermediate tympani studies, orchestral literature Beethoven to Wagner. Performance techniques of most commonly used equipment.

301, 302. **2 cr. each**
 Use of tympani and percussion in late 19th and 20th century literature. Orchestral studies in all instruments. Examination of percussion ensemble materials; group instruction methods. Selection and care of instruments for professional and school use. Extension of mallet study.

401, 402. **2 cr. each**
 Deployment of instruments in band and orchestra settings, conducting the percussion ensemble. Review of teaching methods in basic techniques, the role of the percussion clinician.

Problems in writing and scoring for percussion, discussion of available materials and sources for solo performance.

Piano

101, 102. **2 cr. each**
 Bach, two part inventions, short preludes and fugues; easier sonatas of Haydn and Mozart; Beethoven, Rondo in G; easier nocturnes and mazurkas of Chopin. Major scales M.M. quarter note equals 96; diminished seventh arpeggios M.M. quarter note equals 88. All scales and arpeggios in triplet and quadruplet rhythms.

201, 202. **2 cr. each**
 Bach, two and three part inventions; sonatas of Haydn and Mozart; easier sonatas of Beethoven; nocturnes and waltzes of Chopin; Schumann Op. 15; Scales: Major and Minor M.M. quarter note equals 104. Dominant and diminished seventh arpeggios M.M. quarter note equals 96.

301, 302. **2 cr. each**
 Bach, selected preludes and fugues from Well-Tempered Clavier; Beethoven, Op. 10 No. 2 Op. 27; Chopin, preludes and nocturnes; selections from contemporary repertoire. Continuation of major and minor scales, dominant, diminished seventh and triad arpeggios.

401, 402. **2 cr. each**
 Bach, French Suites, selected preludes and fugues; Beethoven Op. 2 No. 2 and 3, Op. 28, Op. 31; preludes and Impromptus of Chopin; Brahms, Intermezzi; selections from contemporary repertoire. Scales and arpeggios continued.

Saxophone

101, 102. **2 cr. each**
 All major and minor scales and arpeggios; Universal Method for Saxophone or equivalent material; Bassi-Iasilli, Concert Etudes; selected solos.

201, 202. **2 cr. each**
 Continue scales and arpeggios with various articulations; Bassi-Iasilli, Concert Etudes; selected solos.

301, 302. **2 cr. each**
 Mule, Scales and Arpeggios; Gatti-Iasilli, 35

Melodious Technical Exercises; pieces by Faure and Jeanjean.

401, 402. 2 cr. each
Mule, Scales and Arpeggios; Gatti-Iasilli, 35 Melodious Technical Exercises; Labanchi-Iasilli, 33 Concert Etudes; Premier Solo de Concours by Pares; Moritz, Sonata for Saxophone; representative contemporary solos.

Trombone and Baritone Horn

101, 102. 2 cr. each
Studies and exercises in tone production and flexibility by Shiner; Arban, Method for Trombone; major and minor scales through two octaves; selected solos.

201, 202. 2 cr. each
All scales and arpeggios; continue drills and Arban Method for Trombone; selected studies from Cimeria, 170 Etudes; Study of single, double and triple tonguing; Pryor solos and other selected materials; band and orchestral studies.

301, 302. 2 cr. each
Continue technical exercises; Stacey, Lip Flexibility; Rochut, Melodious Etudes Book I-II, Blume, Studies Book I; La Fosse, Sight Reading Studies; study of tenor clef; Croce-Spinelli, Solo de Concours; Alary, Contest Pieces; Morel, Piece in F minor.

401, 402. 2 cr. each
Continue technical exercises; Stacey, Lip Flexibility; Kopprasch Book I-II; Rochut, Melodious Etudes Book III; Blazhevich, Clef Studies; study of bass trombone; Guilmant, Morceau Symphonique; Cimeria, Valse Petite; Ropartz, Andante and Allegro.

Trumpet

101, 102. 2 cr. each
All scales and arpeggios; Schlossberg, Daily Drills; Arban, Complete Method for Trumpet; selected short pieces.

201, 202. 2 cr. each
All major and minor scales and arpeggios; Schlossberg, Daily Drills; Arban, Complete Method for Trumpet; Kreutzer, Ten Studies; Concerto by Grofe; selected solos; band and orchestral studies.

301, 302. 2 cr. each
Continue scales and arpeggios in various articulations; Schlossberg, Daily Drills; Concone, Fifty Lessons; Brandt, Etudes for Trumpet; Bernstein, Rondo for Lifey; Two Pieces for Trumpet by Karzev.

401, 402. 2 cr. each
Continue Schlossberg and Concone; Laurent, Etudes Practiques Book I and II; Hering, 32 Etudes, Clarke solos; Mouquet, Legende Heroique; Balay, Petite Piece Concertante.

Tuba

101, 102. 2 cr. each
All scales and arpeggios; Arban Method for Trombone and Baritone; selected solo material.

201, 202. 2 cr. each
All scales and arpeggios with various articulations; continue Arban; Bell, Foundations of Tuba and Sousaphone Playing; selected solos.

301, 302. 2 cr. each
Continue scales and arpeggios; chromatic scales; Bell, Foundations of Tuba and Sousaphone Playing; Vandercook, Etudes; Rochut, Melodious Etudes Book I; Blume Studies Book I; Tyrrell, Advanced Studies for the BB flat Tuba; selected solos; band and orchestra studies.

401, 402. 2 cr. each
Rochut, Melodious Etudes Book II; Blume Studies Book II; Blazhevich, Etudes for the BB flat Bass; band and orchestra studies.

Violin

101, 102. 2 cr. each
Scales and arpeggios in three octaves; octaves, thirds and sixths separate bows; Kreutzer, 42 Etudes; selected studies by Sevcik; sonatas by Corelli, Nardini; concertos by Viotti and Kreutzer, DeBeriot, Scene de Ballet.

201, 202. 2 cr. each
Scales and arpeggios continued; Mazas Op. 36; Sevcik continued; Sonatas by Handel, Tartini and Veracini; DeBeriot, Concerto No. 9; Viotti, Concerto No. 22.

301, 302. 2 cr. each
Scales and arpeggios continued; scales in thirds,

sixths, octaves and tenths; Rode, 24 Caprices; Mozart sonatas for violin and piano; Mozart, Concerto in G; selected compositions by Kreisler; representative contemporary solos; selected movements of standard concertos.

401, 402. **2 cr. each**
Scales and arpeggios continued; Rode, 24 Caprices; Fiorillo 36 Etudes; Grieg, Sonata in F; Mozart, Concerto in D; Bruch, Concerto in G minor; selected movements of standard concertos, representative contemporary solos.

Viola

101, 102. **2 cr. each**
Scales and arpeggios in three octaves; Sevcik Studies (Lifschey); Hermann, Technical Studies; Telemann, Concerto in G; Klengel, Album of Classical Pieces.

201, 202. **2 cr. each**
Continue scales and Sevcik Studies; selected studies from Kreutzer, 42 Etudes; Stamitz, Concerto in D; Bruch, Romance.

301, 302. **2 cr. each**
Continue scales and arpeggios; scales in thirds, sixths and octaves; Palachko, 20 Etudes; Fiorillo, selected studies from 36 Etudes; Bach, three viola de gamba sonatas adapted for viola.

401, 402. **2 cr. each**
Scales and arpeggios continued; selected studies from Campagnoli, 41 Caprices; Concerto in B minor by Handel-Casadesus; Hindemith, Music of Mourning; selected contemporary solos; viola parts from orchestral and chamber music literature.

Violoncello

101, 102. **2 cr. each**
Scales and arpeggios in three octaves; Franchomme, 12 Studies; sonatas by Handel, Corelli; Concertos by Goltermann and Romberg.

201, 202. **2 cr. each**
Scales and arpeggios continued; Duport Etudes; Galeotti, Sonata No. 2; Marais Suite; Romberg Concerto in D minor.

301, 302. **2 cr. each**
Scales and arpeggios continued; Duport Etudes; Grutzmacher Etudes; Sonatas by Grazioli, Sammartini; Goltermann Concerto No. 1.

401, 402. **2 cr. each**
Scales and arpeggios as before but including thirds, sixths and octaves. Duport Studies; selected studies from Franchomme, 12 Caprices; Concerto No. 2 Romberg; Sonatas by Nardini and Sammartini; orchestral studies.

Voice

101, 102. **2 cr. each**
Fundamentals of tone production; vocalises and songs to suit the needs of the student. Songs will be chosen from the repertory of easier materials in English and Italian.

201, 202. **2 cr. each**
Exercises to develop flexibility, range and power; early Italian art songs by Bononcini, Pergolesi, Caccini; contemporary songs in English.

301, 302. **2 cr. each**
More advanced technical study. Italian art songs of Scarlatti and Caldara; representative examples of easier German lieder and moderately difficult contemporary song literature.

401, 402. **2 cr. each**
Advanced technical exercises to fit the student's need. Less difficult arias chosen from the standard operatic and oratorio literature; representative songs in German, French and English with emphasis on contemporary materials in English.

CONDUCTING

379. CONDUCTING. **2 cr.**
This course provides a study of the fundamentals of conducting as a performing skill, teaching technique, and as an interpretive art. Use of the baton, choral and instrumental rehearsal techniques, and score reading. Two hours a week.

ENSEMBLE

Required for all students as laboratory work during each semester of full-time enrollment. At least four semesters (usually the first four) must be spent in one of the major ensembles—Orchestra, Band, Concert Choir—after which a student may, with the request or approval of the conductor, take one of the smaller ensembles for credit applicable toward the total ensemble requirement. Students must indicate the specific ensemble for which they are enrolling on forms completed during registration.

143, 144, 243, 244, 343, 344,
443, 444, 445, 446. **ENSEMBLE**

BACHELOR OF SCIENCE IN MUSIC EDUCATION.

1 cr. each

Voice, Piano, and Organ Majors will participate in a choral ensemble for each semester of enrollment. Instrumental Majors will participate in Band, Orchestra and/or other instrumental ensemble for each semester of enrollment.

Instrumentalists are encouraged to take advantage of opportunities to participate in choir; keyboard or voice majors are likewise encouraged to gain experience in one of the instrumental ensembles.

BACHELOR OF MUSIC.

Voice Majors will participate in choir or other choral/vocal ensemble. Piano and organ majors will accompany soloists as approved by the studio faculty. Instrumental Majors will participate in band, orchestra, or other instrumental ensemble.

147, 148, 247, 248, 347, 348,
447, 448. **SMALL**

ENSEMBLE.

1 cr. each

The Small or Minor Ensembles include Tamburitza Ensemble, Chamber Singers, Brass Ensemble, Percussion Ensemble, Woodwind Ensemble, Jazz Ensemble, and Guitar Ensemble. May be taken by freshmen and sophomores for extra credit or by juniors and seniors for required credit provided that Major Ensemble requirements have been satisfied, and that permission of the conductor has been granted.

116, 117, 216, 217, 316, 317,

416, 417. **OPERA WORKSHOP.**

1 cr. each

A performing class in which students learn standard and other opera repertory in English and the original languages. There is one major

production each semester plus several outside performances. May be taken by freshmen and sophomores for extra credit or by juniors and seniors for required credit provided that Major Ensemble requirements have been satisfied, and that permission of the conductor has been granted.

141, 142, 241, 242, 341, 342,

441, 442. **CHAMBER MUSIC.**

1-2 cr. each

Study and performance of all types of chamber music for the various instrumental combinations.

EURHYTHMICS

121, 122. **EURHYTHMICS.**

2 cr. each

Fundamentals of rhythmic movement. Study of pulse, meter, rhythm, and duration; the expressive qualities of music such as tempo, dynamics, and phrasing realized and expressed through bodily movement. Two hours a week.

MUSIC EDUCATION

181. WOODWIND CLASS

METHODS I.

2 cr.

Fundamental principles and techniques of playing and teaching the clarinet. Study of literature which is appropriate for beginning class instruction. For voice, piano, and organ majors in the music education program. Offered in the fall semester. Two hours a week.

182. WOODWIND CLASS

METHODS II.

2 cr.

Performance technique on clarinet continued. Teaching technique of oboe, bassoon and saxophone covered. For voice, piano, and organ majors in the music education program. Prerequisite: Music 181. Offered in spring semester. Two hours a week.

183. WOODWIND CLASS**METHODS I. 2 cr.**

Fundamental principles and techniques of playing and teaching the clarinet. Study of literature which is appropriate for beginning class instruction. For woodwind, brass, string, and percussion majors in the music education program. Offered in the fall and spring semesters. Two hours a week.

184. WOODWIND CLASS**METHODS II. 2 cr.**

Fundamental principles and techniques of playing and teaching the saxophone, oboe, flute and bassoon. Study of mechanism and evaluation of class methods and materials. Students are expected to develop a reasonable performing skill on each instrument. For woodwind, brass, string, and percussion majors in the music education program. Music 183 is not a prerequisite for this course. Offered in the fall and spring semesters. Two hours a week.

185, 186. VOICE CLASS. 2 cr. each

Fundamentals of voice production including placement, breathing, breath control, study of vowels and consonants, posture, elementary song materials, interval and scale drill, sight singing.

213, 214. PIANO CLASS. 1 cr. each

The development of functional keyboard skills in sight reading, transposition, harmonization of melodies, and improvisation of accompaniments. Required of all Music Education students with the exception of piano majors. Two hours a week. Prerequisites: Piano 111, 112 or Advanced Standing Examination.

215. PIANO CLASS FOR PIANO

MAJORS IN MUSIC EDUCATION. 1 cr. each
Piano majors in Music Education study the development of functional keyboard skills in sight reading, transportation, accompaniments. Required of all Piano Majors. Two hours a week.

281. BRASS CLASS METHODS I. 2 cr.

Fundamental principles and techniques of playing and teaching the trumpet. Study of literature which is appropriate for beginning class instruction. For voice, piano, and organ majors

in the music education program. Offered in the fall semester. Two hours a week.

282. BRASS CLASS**METHODS II. 2 cr.**

Performance technique on trumpet continued. Teaching technique of French horn, trombone, baritone, and tuba. For voice, piano, and organ majors in the music education program. Prerequisite: Music 281. Offered in the spring semester. Two hours a week.

283. BRASS CLASS**METHODS I. 2 cr.**

Fundamental principles and techniques of playing and teaching the trumpet. Study of literature which is appropriate for beginning class instruction. For woodwind, brass, string, and percussion majors in the music education program. Offered in the fall and spring semesters. Two hours a week.

284. BRASS CLASS**METHODS II. 2 cr.**

Fundamental principles and techniques of playing and teaching French horn, trombone, baritone, and tuba. Study of construction, fingering, and evaluation of class methods and materials. For woodwind, brass, string, and percussion majors in the music education program. Music 283 is not a prerequisite for this course. Offered in the fall and spring semesters. Two hours a week.

381. STRING CLASS**METHODS I. 2 cr.**

Each student selects one of the string instruments and studies it throughout the semester in order to attain greater technical proficiency. Two hours a week.

382. STRING CLASS**METHODS II. 2 cr.**

Fundamental principles and techniques of playing and teaching the violin, viola, cello, and bass. Bowing, positions, vibrato, and an examination of class methods and materials are presented. Two hours a week.

383. ELEMENTARY METHODS. 2 cr.

Principles, practices, and materials for the general program in the elementary grades. A

program of scheduled observations and discussion periods will be required. Two hours a week.

384. SECONDARY METHODS. 2 cr.

Principles, practices, and materials for the general music program in the secondary schools including voice classification; the organization of ensemble activities; concerts; assembly programs; and the relationship of the school to the community. A program of scheduled observation and discussion periods will be required. Two hours a week.

385. CHORAL METHODS. 1 cr.

This course deals with all aspects of choral singing and their application to school music programs. Emphasis is placed on the development of performance ensembles, rehearsal techniques, special choral problems, planning musical productions and practical work in choral conducting and arranging. Includes principles, practices, materials, and an overview of current teaching strategies and curriculum trends as applied to the total music program of the secondary school. Offered Spring Semester only.

387. MARCHING BAND METHODS. 1 cr.

Principles, practices, and materials for the marching band are studied including its role in the total music program; organization and maintenance; planning and executing of the field show; basic maneuvers and rehearsal procedures. Offered Fall Semester only.

481. PERCUSSION CLASS METHODS. 2 cr.

Fundamental principles and techniques of playing and teaching the percussion instruments of the band and orchestra with special emphasis on the snare drum. Two hours a week.

490. STUDENT TEACHING. 6 cr.

Practice teaching in approved elementary and secondary schools under the guidance of a critic teacher and the college supervisor. Note: Before a student will be permitted to begin Student Teaching, all methods classes including instru-

mental classes, piano, woodwinds, brass, strings, and voice must be satisfactorily completed. Percussion class may be taken in the senior year prior to or concurrently with the student teaching assignment. Students will receive complete instructions, together with lists of materials, when they enroll in the Music Education program. Practical techniques to aid students in fulfilling the requirements will be explored in various methods classes.

MUSIC HISTORY, LITERATURE AND ART

251, 252, 351, 352.

MUSIC AND WESTERN CIVILIZATION. 3 cr. each

An historical survey of the ideas and cultural achievements of Western man in the context of the political and sociological developments to which the art of music is bound. The survey embraces four semesters which are arranged chronologically. These courses seek to provide a broad historical frame of reference within which the relationship of music to the development of man's thought can be clearly seen.

451, 452. ORGAN LITERATURE. 2 cr. each

A survey of organ literature and organ building. Outside listening and readings will be required.

349, 350, 449, 450. VOCAL REPERTOIRE. 1 cr. each

Study and performance of vocal solo and ensemble literature. Four semesters encompass Italian, German, French, and Contemporary (United States and Britain) music, with concentration on one category each semester.

253. VISUAL ARTS. 3 cr.

Designed to give the student a basic vocabulary in the visual arts (painting, sculpture, architecture, and the graphic arts) and to make him conversant with the most important styles he will encounter. During the course of the semester, the course will include several visits to the museums and galleries in the Pittsburgh area.

MUSIC THEORY

The Theory Department recognizes the individual differences of students and provides an opportunity for them to advance according to their abilities.

131, 132. THEORY. 2 cr. each

This course is designed to acquaint the student with the materials of musical composition using diatonic harmony. Opportunities for the student to do creative work are provided. Three hours a week.

133, 134. SOLFEGGIO AND EAR TRAINING. 2 cr. each

The goals of the course are to develop good intonation and the ability to sight sing, the ability to identify and notate melodies, rhythm, chords, and complete compositions, and to develop inner hearing and memory. The devices used are solfeggio (singing unison and ensemble music, prepared and on sight), drills on intervals and broken chords, unison and two-part rhythm exercises, keyboard work and clef reaching, and systematically graded diction. The course uses the moveable Do system, based on the Kodaly method. Two hours a week.

231, 232. THEORY. 2 cr. each

A continuation of 132 introducing chromatic harmony and the basic principles of contrapuntal writing. Creative opportunities continued. Three hours a week.

233, 234. SOLFEGGIO AND EAR TRAINING. 2 cr. each

A continuation of 134. Two hours a week.

335. COUNTERPOINT. 2 cr.

The course is devoted to a study of the polyphonic technique of the sixteenth century.

336. COUNTERPOINT. 2 cr.

A course study concerned with the harmonic contrapuntal technique of the period of J. S. Bach.

340. ORCHESTRATION. 2 cr.

A study of the basic problems of scoring for individual instruments, particular orchestral choirs, the entire orchestra, and unique instrumental combinations. Analysis of the techniques of orchestration of selected composers of the 18th, 19th, and 20th centuries.

440. JAZZ ARRANGING. 2 cr.

A study of the basic techniques of scoring for individual instruments and jazz ensembles of various sizes, from small groups to studio orchestra. Special emphasis will be placed on harmonies, voicings, instrumentation and articulations which are characteristic of this kind of music. May be taken in place of Orchestration 340. Offered in the Spring Semester only.

426. JAZZ IMPROVISATION I. 2 cr.

Melodic and harmonic creation of the basis of idiomatic jazz rhythms and articulations, employing elementary and advanced forms, chord structures and chromatic alterations. Permission of instructor required.

427. JAZZ IMPROVISATION II. 2 cr.

Continuation of 426.

138, 139. COMPOSITION. 2 cr. each

The study of writing of musical composition in the smaller forms.

238, 239. COMPOSITION. 2 cr. each

The study and writing of musical composition in the larger forms.

338, 339, 438, 439. COMPOSITION. 2 cr. each

These courses are offered in order to provide gifted young composers an opportunity to receive guidance in the development of advanced compositional techniques. Permission of the chairman of the Theory Department is required.

MUSIC THERAPY

107. MUSIC THERAPY ORIENTATION. 2 cr.

An introduction to Music Therapy as practiced in a variety of rehabilitation settings. Observations followed by informal group discussions. Basic theory about the validity of music as therapy; the relationship of theory to practice. Intensive class participation will be required to

prove qualification for further, in-depth study of the profession.

108. MUSIC IN THERAPY. 2 cr.

A course designed to increase the student's self-identification as a music therapist by weekly assignments to rehabilitation settings. Understanding goals and relationships of treatment or education, learning to make systematic observations through written progress reports, and discussions about specific writings related to personal experiences are included in the course work. Prerequisite: Music Therapy 107.

307. PSYCHOLOGY OF MUSIC. 2 cr.

An exploration of musical behaviors, and to a lesser degree, all other art behaviors of a variety of cultures and sub-cultures, beginning with the student's personal experience. Extensive class participation will be expected. Prerequisite: Psychology.

308. INFLUENCE OF MUSIC ON BEHAVIOR. 2 cr.

A study of the uses of music in society including movies, television, industry, churches, schools, hospitals, etc., and the rationale thereof. Discussion, reading and individual research projects will be assigned. Prerequisites: General Psychology or equivalent and Junior standing.

309. DIRECTED STUDY IN MUSIC THERAPY. 2 cr.

124, 223, 224, 323, 324, 423, 424. MUSIC THERAPY PRACTICUM. 1 cr. each
Supervised field work in an approved agency.

SACRED MUSIC

CHILDREN'S CHOIRS. 1 cr.
Materials and techniques used in dealing with children's choirs.

CHORAL CONDUCTING AND METHODS 2 cr.

Development of conducting technique. The study, rehearsal and class performance of choral works in various styles.

CHURCH MUSIC ADMINISTRATION. 2 cr.

Seminar in practical aspects of church music:

establishing the music program in a church; graded choir systems; children's choirs; instruments in worship; contracts; cantor systems; worship commissions, etc.

GREGORIAN CHANT. 2 cr.

The history, notation and modal systems of Gregorian chant. Class participation in the singing of chant. Chant as prayer and current liturgical application.

HYMNODY. 2 cr.

A study of the church's heritage of song: the psalms; the great hymns of the Medieval Church; the heritage of Luther, Calvin and their followers; English hymnody; American contributions; twentieth-century hymnody with special emphasis on the theological framework for each major development in the history of hymns.

ORGAN DESIGN AND MAINTENANCE. 2 cr.

A study of the basic concepts of organ construction with emphasis on the historical development of the organ and mechanical operation of the pipes and console. Tuning, voicing, and esthetics of organ design will be discussed.

SACRED CHORAL LITERATURE. 2 cr.

A survey of choral literature for the church with emphasis on practical materials for church choirs and congregations.

TAMBURITZANS INSTITUTE OF FOLK ARTS

154. INTRODUCTION TO FOLKLORE. 3 cr.

An introductory examination of the definition and scope of folklore studies, and the role of folklore in people's lives. Examined are various forms of folklore and folk expression such as tales, ballads, myths, legends, beliefs, games, proverbs, riddles, folk songs, and folk customs and their roles in societies.

255. INTRODUCTION TO BALKAN MUSIC. 2 cr.

An analytical study of the primitive and tradi-

tional folk music of the Balkans, its musical styles, forms and characteristics in terms of its geographical setting and historical background, and its general structure and aesthetics.

256. INTRODUCTION TO

BALKAN DANCE.

2 cr.

A survey of folk dances of the Balkans highlighting their development, form, indigenous characteristics, differences and similarities from one ethnographic region to another.

147, 148, 247, 248, 347, 348, 447,

448. TAMBURITZA ENSEMBLE. 1 cr. each

The Tamburitza Ensemble involves the study and performance of music specifically composed and arranged for both small and large Tamburitza string ensembles. It encompasses the fundamental principles and techniques for both playing and teaching the Tamburitza and includes appropriate literature. May be taken by freshmen and sophomores for extra credit or by juniors and seniors for required credit provided that Major Ensemble requirements have been satisfied, and that permission of the conductor has been granted.

NON-MUSIC MAJORS

253. VISUAL ARTS.

3 cr.

Gives students a basic vocabulary in the visual arts (painting, sculpture, architecture, the graphic arts) and to make them conversant with the most important styles they will encounter. During the course of the semester, the course will include several visits to museums and galleries in the Pittsburgh area.

321. MUSIC FOR THE

CLASSROOM TEACHER.

2 cr.

The aim of this course is to assist the student in gaining an appreciation of the importance of music in the lives of children; a knowledge of fundamental principles of instruction in music; and a familiarity with the variety of musically enriching experience.

GENERAL EDUCATION

191. HUMAN PHYSIOLOGY.

3 cr.

A study of the fundamental principles of human physiology as a basis for the understanding of artistic expression and music therapy.

491. PHYSICAL SCIENCE

(ACOUSTICS).

3 cr.

A course in the science of sound designed to give the student a knowledge of the basic principles of the nature of sound, its production and transmission. Consideration is also given to the mechanism of hearing and the physical basis of harmony, scales, electronic recording, and reproduction of recorded sound.

492. DEVELOPMENT OF THE

CREATIVE PERSONALITY

3 cr.

This course encourages personal and social creative growth through discussion and participation in individual and group problem solving projects. Situations are structured, based on the philosophical and psychological dynamics of the creative person. Limited enrollment. Prerequisites: Introduction to Psychology, Educational Psychology, and consent of the instructor.

Descriptions of courses in English, modern languages, psychology, sociology, and education, required in the several curricula will be found in the College of Liberal Arts and Sciences and School of Education sections of this Catalog.



School of Nursing

HISTORY

Since it is the policy of the University to establish its schools under control of an already established school, the School of Nursing was originally organized in 1935 as a unit in the College of Liberal Arts and Sciences. On March 15, 1937, the Department of Nursing Education was given the status of a separate school with a Dean in charge. On December 3, 1937, the State Board of Education of the Commonwealth of Pennsylvania approved the school and authorized Duquesne University to confer the degree of Bachelor of Science in Nursing and the degree of Bachelor of Science in Nursing Education upon graduates according to the appropriate curriculum. Previously, the School of Nursing offered two programs both leading to the degree of Bachelor of Science in Nursing. Since 1964, the School of Nursing offers one program for both generic nursing students and registered nurse students in which they enroll for courses leading to the degree of Bachelor of Science in Nursing.

PHILOSOPHY

The School of Nursing's philosophy and objectives evolve from those of the University. As such, they guide the development of a personal philosophy of life based on a Christian frame of reference, and support a commitment to the values which give meaning to life. To accomplish this, the faculty of the School of Nursing approaches the concepts of Man, Nursing, and Health from an existential philosophical base.

Man is a living unity, a creative act of God, whose existence in the world is through his body. The existence is co-constituted; that is, man's relationship with his environment is participative. Man chooses his way of being with the world, and in that choosing he gives meaning to the situation. His freedom is limited within his situation. Man's existence has the potential to become more meaningful through Christ-participation in humanity.

Nursing is a human science profession primarily concerned with the care of man as he evolves from conception through death. It focuses on helping individuals and families to promote health and enhance the quality of living. The nurse interrelates with families to help them describe their health status, evaluate alternatives, and mobilize their resources for change. Central to professional nursing practice is the nursing process which is a deliberate systematic series of actions designed to affect nursing care. The nurse bases her practice on theories and concepts that are multidisciplinary in nature.

Health is a subjective state of well-being experienced by man. It is a relative condition that affords an individual the potential for productive and meaningful life. While health is a fundamental right, every person has the freedom to pursue his desired level of health. Society's health-nursing needs

are assessed by both the consumer and the promoters of health care through a participative process which involves planning and decision-making.

Education occurs in a co-constituted teaching-learning environment. The teacher and the student work together in planning experiences and sharing knowledge. The teacher provides leadership in the selection and organization of learning experiences in a variety of health settings. The need for new knowledge and the revision of present knowledge is identified in the on-going interrogation of new experiences.

The professional nurse is educated in an institution of higher learning in a program which grants a baccalaureate degree in nursing. He/she is a creative innovator who finds satisfaction in giving service to others, who regularly evaluates self, who plans for continual growth, and who promotes the evolution of nursing toward independence.

The Duquesne University School of Nursing baccalaureate program graduates a generalist who is prepared to function on a beginning level within established health care systems and who possesses the flexibility to function in a variety of settings. The graduate program builds upon the baccalaureate program and prepares the graduate for the leadership roles of family health nurse, teacher of family health nursing or administrator of family health nursing services.

OBJECTIVES

The objectives of the program, designed to prepare students to assume the role of professional nurses in a variety of settings and also provide foundation for further study in nursing, are to:

1. Formulate a philosophy of life that reflects concern for self and others.
2. Synthesize a philosophy of professional nursing.
3. Actively participate within a variety of health care systems.
4. Contribute to nursing research as a means for furthering the profession of nursing.

ADMISSION REQUIREMENTS

The specific entrance requirements for admission are:

1. The applicant's high school curriculum must include a minimum of 16 units distributed as follows:

English	4 units required
Social Studies	3-4 units recommended
Language	2 units recommended
Mathematics and Science ..	6 units recommended (1 unit Chemistry and 1 unit Algebra required)

2. A candidate must have been graduated from an approved secondary school in the upper two-fifths of the class, and must have demonstrated exemplary personal conduct in the institution.

3. The primary consideration for admissions is the secondary school academic record. This is considered to be the most important criterion of success at Duquesne University. It is the desire of the Admissions Committee

to admit those candidates who possess qualities of character and intellect and who show promise of development into useful and contributing citizens.

4. A candidate must present satisfactory scores on the required College Entrance Examination Board Scholastic Aptitude Test in accordance with the standards adhered to by the University.

In specific instances, and at the discretion of the Committee on Admissions, the genuine equivalent of these requirements may be accepted in lieu of the foregoing precise requirements.

ADMISSION OF REGISTERED NURSE STUDENTS

Registered nurses who have completed a diploma or associate degree program in nursing who wish to pursue study for a bachelor's degree must follow general admission procedures. In addition, they should:

1. Present evidence of registration as a professional nurse in one state or territory before admission or during the first semester of enrollment.

2. Submit an official copy of school of nursing transcript.

3. Submit an official copy of transcript from previous college or university attended, if applicable.

4. Submit a recommendation for collegiate study from the director of nursing of the school of nursing from which the student was graduated or recommendation from present employer.

5. Arrange for a personal interview with the Academic Advisor in the School of Nursing, if applicant resides within a reasonable distance.

SECOND BACCALAUREATE DEGREE PROGRAM

Applicants holding a baccalaureate degree with a major other than nursing must follow transfer student admission procedures (see page 181). In addition they must:

1. Arrange for a personal interview with the Academic Advisor in the School of Nursing.

2. Submit a letter to the Student Standing Committee of the School of Nursing, stating reason(s) for pursuing the baccalaureate degree in nursing.

SPECIAL FEES

All figures are for one semester only. For yearly total, double amounts where applicable.

Chemistry Laboratory Courses

Laboratory Fee\$20

Biology Laboratory Courses

Laboratory Fee\$25

(One \$5.00 breakage card a semester will cover laboratory courses in biology, chemistry and physics.)

Anatomy and Physiology

Laboratory Fee\$25

Breakage Deposit\$ 5

Challenge Examinations each credit hour—\$10
(non-refundable)

Miscellaneous Costs

Uniforms, approximate total cost \$50.

Special health requirements

Books and miscellaneous supplies.

Transportation to and from agencies, approximate cost \$5 weekly.

School of Nursing pin for graduation, approximate cost \$15.

Student Liability Insurance (Professional), approximate cost \$41 for three-year period.

STUDENT ORGANIZATIONS

The nursing student is a member of the general student body and may select and participate in any of the campus organizations. There are numerous social sororities and organizations as well as professional organizations.

Alpha Tau Delta is a national professional fraternity for persons in nursing. Theta Chapter was chartered on the Duquesne University campus on April 21, 1938. Only full-time students who have completed a minimum of one semester in the School of Nursing with a cumulative quality point average of 2.5 are eligible.

HONOR AWARDS

In addition to graduation honors, these awards are presented at Honors Day:

The Mary W. Tobin Gold Medal and *The Dean Johnson Memorial Medal* are awarded annually to two outstanding seniors chosen by the faculty for general excellence in nursing. *The Mary W. Tobin Medal* is sponsored by Theta Chapter of Alpha Tau Delta National Professional Fraternity for persons in nursing.

GRADUATION REQUIREMENTS

Specific requirements for the Bachelor of Science in Nursing degree are:

1. Two courses in English and one course in speech.
2. Four courses in philosophy and theology. One course in theology is required for Catholic students.
3. Seven courses in the behavioral sciences including human development, principles of management, two or three courses in psychology and two or three courses in sociology.
4. A minimum of 14 credits selected from chemistry, biology, microbiology, and/or physics.
5. Nursing Sciences: Anatomy and Physiology, Pathophysiology and Nutrition.
6. Nursing Major: Nursing 303, 305, 307, 401 and Nursing electives.

Degree requirements must be completed within ten years after initial enrollment. At the end of the ten-year period, the student's record is re-evaluated in terms of the curriculum in effect at that time, and the student

is advised of any additional requirements for graduation. The responsibility for fulfilling degree requirements rests with the student.

PROGRAM OF STUDY

The School of Nursing offers a program with a major in nursing leading to a baccalaureate degree to qualified high school graduates, registered nurses, and non-nursing baccalaureate degree graduates who wish to prepare themselves for professional responsibilities in beginning positions in nursing. The program includes four years of study, and is designed to provide the student with the knowledge and skills needed to function as a professional nurse generalist upon graduation. The foundations in general and professional education acquired in this program provide a basis for the graduate to progress to positions of increasing responsibility and to undertake graduate study.

The curriculum design is basically that of a professional education program. Selected courses in the humanities and the behavioral, natural, and social sciences provide the foundation for the nursing major. Professional nursing courses, which constitute the nursing major, include theory and practice in the nursing care of individuals and families. Learning opportunities are provided in the hospital, in the home, and in the community. To strengthen and enrich the personal and professional development of the student, courses in the liberal arts are taken throughout the program.

The faculty of the School of Nursing conduct all of the professional nursing courses and also guide and direct the clinical nursing learning experiences. Several hospitals and agencies cooperate with the School of Nursing to provide a wide selection of excellent clinical nursing practice.

Upon the successful completion of this program, graduates will be eligible to write the examination for licensure in the state in which they wish to practice.

The faculty reserves the right to make changes in the curriculum and program requirements which it believes are in keeping with the changing health needs of society and/or the best interests of the students and the School to maintain quality professional nursing education.

REGISTERED NURSES

Registered nurse students who are graduates of a diploma or associate degree program in nursing may receive credit for selected nursing courses depending on evaluation of the previous educational program and satisfactory achievement on challenge examinations offered by the School of Nursing. Non-nursing courses taken at another college or university may be considered for transfer of credit, subject to University policy regarding transfer students stated elsewhere in this catalog.

SUGGESTED CURRICULUM PLAN**Freshman Year**

<i>Fall Semester</i>		<i>Spring Semester</i>	
<i>Courses</i>	<i>Credits</i>	<i>Courses</i>	<i>Credits</i>
Science (laboratory)	4	Science (laboratory)	4
English	3	English	3
Psychology	3	Sociology	3
Science (laboratory)	4	Science (laboratory)	4
	<u>14</u>		<u>14</u>

Sophomore Year

Anatomy & Physiology	4	Anatomy & Physiology	4
Human Development	3	Pathophysiology	3
Nutrition	3	Theology	3
Sociology	3	Psychology	3
Philosophy	3	Philosophy	3
	<u>16</u>		<u>16</u>

Junior Year

Commonalities in Nursing	9	Nursing & The Family I	9
Speech	3	Philosophy	3
Principles of Management	3	Psychology or Sociology	3
	<u>15</u>		<u>15</u>

Senior Year

Nursing & The Family II	9	Nursing Electives	9
Electives	6	Systematic Inquiry into	
		Nursing	3
		Electives	3
	<u>15</u>		<u>15</u>

CURRICULUM STANDARDS

To progress to the junior clinical nursing courses, a minimum QPA of 2.5 is required with a minimum of a C grade or better in Anatomy and Physiology, Nutrition and Pathophysiology.

To remain in good standing in the School of Nursing, the student must attain a minimum of a C grade in each clinical nursing course.

A Pass/Fail grade is given in clinical practice. An F in either theory or clinical practice will result in an F grade for the course.

The School of Nursing faculty reserves the right to withdraw any student from the nursing major who, in its opinion, has not progressed satisfactorily in clinical practice, even though the quality point average meets required standards.

School Nurse Certification

Through completion of the baccalaureate curriculum leading to School Nurse Certification, a student will be eligible to apply for School Nurse Certification. Application for certification must be made through the Office of the Dean.

DEGREE CURRICULUM FOR SCHOOL NURSE

Core Requirements		Professional Nursing	
<i>Courses</i>	<i>Credits</i>	<i>Courses</i>	<i>Credits</i>
English	6	Anatomy and Physiology	8
Speech	3	Pathophysiology	3
Philosophy	9	Nutrition	3
Religion	3	303 Commonalities in Nursing	9
Survey of Sociology	3	305 Nursing & The Family I	9
Introduction to Psychology	3	307 Nursing & The Family II	9
*Principles of Chemistry	8	401 Systematic Inquiry in Nursing ...	3
*General Biology	8	421 Health Care in the	
Principles of Management	3	School Setting	3
		Senior Electives	6
	46		53
Professional Education			
Human Development	3		
Educational Psychology <i>or</i>			
Foundations of Education	3		
Schools and the Law	3		
Family Systems	3		
Electives (Psychology, Sociology			
of Education)	9		
	21		

*Other laboratory sciences may be substituted.

COURSE DESCRIPTIONS

Descriptions of courses in liberal arts and sciences may be found in the College of Liberal Arts and Sciences section, pages 14 to 65.

209, 210. ANATOMY AND PHYSIOLOGY.

4 cr. each

A study of the normal human body structure and function. Laboratory includes physiological experiments, dissection of preserved and fresh specimens, and a study of microscopic slides. Lecture, four hours; Laboratory, three hours each semester.

211. PATHOPHYSIOLOGY.

3 cr.

Introduction to the basic scientific concepts of the disease process. Lecture, three hours. Prerequisite: 209 or 210.

255. NUTRITION.

3 cr.

Nutrition principles and their importance to all ages; factors influencing food habits; exploration of ways in which nurses may help families

and individuals apply nutrition facts for increased health and well-being; recent research in relation to such national problems as heart disease, obesity, and increased life span. Prerequisite: Minimum of 12 credits of laboratory sciences. Lecture, three hours.

303. COMMONALITIES IN NURSING.

9 cr.

The beginning nursing course which provides core content common to nursing practice. The nursing process is the unifying focus and is the means by which care is provided to clients/families in various settings. Prerequisites: 209, 210, 211, 255. Lecture, five hours; Laboratory, 12 hours.

305. NURSING AND THE FAMILY I.

9 cr.

Designed to enable nursing students to utilize the nursing process in family situations involving the childbearing and childrearing years. Emphasis is placed on prevention of illness, promotion of health, and adaptation of family members to varying life experiences within the expanding family. Prerequisite: 303. Lecture, four hours; Laboratory, 15 hours.

307. NURSING AND THE FAMILY II.

9 cr.

Provides nursing students with opportunities to implement the nursing process with adult clients and their families in a variety of settings. The health care problems encountered throughout the life span of the adult are studied so that the role of the nurse regarding health promotion for this age group can be demonstrated. Prerequisite: 303. Lecture, four hours; Laboratory, 15 hours.

401. SYSTEMATIC INQUIRY.

3 cr.

An introduction to research in nursing. It considers the research process, the use of scientific criteria in evaluating current nursing research, and application of various methodologies and techniques. Prerequisites: 303, 305, 307. Spring Semester.

NURSING ELECTIVES

405. CONTEMPORARY ISSUES.

3 cr.

This course focuses on fundamental issues in

the field of health care services. Opportunity is provided to study and discuss the various issues as they relate to nursing with special emphasis on their implications for nursing education and practice. Prerequisites: 303, 305, 307. Lecture, three hours. Spring Semester.

413. FEMINIST INQUIRY IN NURSING.

3 cr.

This course reviews the history of nursing and the role of women in the healing professions. Focus, in the historical context, is upon the role of the nurse in the health system or the setting of the time. Philosophical assumptions and psychological, sociological, and theological theories describing or defining the nature of women are discussed. Prerequisites: 303, 305, 307. Lecture, three hours. Spring Semester.

421. HEALTH CARE IN THE SCHOOL SETTING.

3 cr.

This course is concerned with the traditional and expanded roles, functions and responsibilities of the school nurse in providing health services and health education for school populations in a variety of settings. Major emphasis is on theories of cognitive and psychosocial development and primary, secondary, tertiary principles of prevention in the provision of health services and health education. Prerequisites: 303, 305, 307. Lecture, two hours; Laboratory, three hours. Spring Semester.

425. THE LONG TERM CLIENT AND FAMILY IN THE COMMUNITY.

3 cr.

This course builds upon the concepts of family health care that were implemented in Commonalities, Family I, and Family II. Family theories are presented and the student has the opportunity to implement the nursing process with long-term clients and families in a community setting. Prerequisites: 303, 305, 307. Lecture, one and one-half hours; Laboratory, four and one-half hours. Spring Semester.

427. CONCEPTS OF CRITICAL CARE NURSING.

3 cr.

This course focuses on the nursing care of the critically ill client. Specific concepts will be utilized to organize both the existential and the

task-oriented dimensions of nursing in the critical care environment. Research in the nursing literature is compared to the phenomenological approach in the discussion of the following concepts: The World as Environment, Technology, Depersonalization, Dependency, Anxiety, Immobility, Pain and Suffering. Prerequisites: 303, 305, 307. Lecture, one and one-half hours; Laboratory, four and one-half hours. Spring Semester.

435. CARE OF THE DYING**CLIENT AND HIS FAMILY.****3 cr.**

The focus of this course is the nursing student's implementation of the nursing process with a client and family in life-threatening situations and the dying process. Various theories of the grieving process are reviewed. Dying is discussed as a personal, individual phenomenon. Death is examined as a biological and medical reality, as a social and cultured event, as an economic fact of life, as a psychological process, and as a religious and spiritual event. Prerequisites: 303, 305, 307. Lecture, one and one-half hours; Laboratory, four and one-half hours. Spring Semester.

437. HUMAN SEXUALITY.**3 cr.**

This course is designed to explore the meaning and importance of sexuality in health care, its implications for nursing, and its application in nursing through the nursing process. There is emphasis on the development of comfort with the student's own sexuality. Prerequisites: 303, 305, 307. Lecture, three hours. Spring Semester.

**443. REHABILITATION NURSING IN
THE GENERAL HOSPITAL.****3 cr.**

This course focuses on the client and his family as members of a community. The general hospital and ambulatory care setting are viewed as an integral part of the community. The concept of continuity of care is explored by students as they participate in the rehabilitation nursing care and discharge planning of hospitalized persons with post-hospital needs. Prerequisites: 303, 305, 307. Lecture, one and one-half hours; Laboratory four and one-half hours. Spring Semester.

**450. THE SCHOOL AND
THE LAW.****3 cr.**

The study of the law as it relates to professional employees of the school, the pupil and the school nurse. It includes a study of the school nurse's duties, rights and her relationships to other school personnel. Prerequisites: 303, 305, 307. Lecture, three hours. Spring Semester.

**455. ADVANCED CONCEPTS IN
CHILD HEALTH CARE.****3 cr.**

This course focuses on the pathophysiology of pediatric diseases and children's reactions to illness and dying. Family dynamics and changes within the family resulting from illness of a child are explored in depth. Specific nurse roles and functions as a health care provider in prevention and during acute, chronic, and terminal phases of pediatric illness are emphasized. Prerequisites: 303, 305, 307. Lecture, three hours. Spring Semester.



School of Pharmacy

HISTORY

Plans for establishing a School of Pharmacy were instituted in 1911, when the charter of the University was amended and authority obtained to grant degrees in Pharmacy. On April 20, 1925, the final work of organizing the School of Pharmacy was completed. The first class was received September 21, 1925.

The Duquesne University School of Pharmacy is housed in Richard King Mellon Hall of Science, whose design by master architect Mies van der Rohe won the "Laboratory of the Year" award for 1969 in the annual Industrial Research, Inc. survey of new science buildings across the country. The School's specialized facilities include the Hugh C. Muldoon Model Pharmacy, animal operating room, electronics laboratory equipped with individual kits, bionucleonics laboratory, eight additional teaching laboratories, and a manufacturing pharmacy laboratory containing basic pharmaceutical manufacturing equipment and separate tableting and aerosol technology rooms.

PHILOSOPHY AND OBJECTIVES

The School of Pharmacy, as an integral part of the University, embodies as its own, the aims and objectives set forth by the University. Its primary purpose is to afford men and women with an education in the fields of Pharmacy and its allied sciences which will enable them to meet both the present and future demands of their chosen profession. Through a well integrated curriculum which includes professional elective courses, laboratory work, careful supervision by experienced teachers, and coursework in the liberal and cultural areas, the School of Pharmacy seeks to develop the student both professionally and individually. The comprehensive and specialized nature of this curriculum offers the Pharmacy graduate a choice of occupations within the profession and its closely allied fields, as well as an adequate foundation for the continuation of studies on a graduate level in one of many areas.

Within the profession of pharmacy, he may become a community pharmacist, hospital pharmacist, or a pharmacist in government service. Many pharmacists find employment as medical service representatives for drug manufacturers. Some enter the wholesale drug business and the pharmaceutical manufacturing industry. Graduates in pharmacy are exceptionally well-qualified to become agents for the enforcement of narcotic and pure food and drug laws. Many pharmacists find employment as chemists or biologists in industrial and research organizations in allied fields; others enter the profession of teaching. Additional study is required for some of these posi-

tions. A few pharmacists continue their study in other health professions leading to a second professional degree or an advanced degree in the basic pharmaceutical and medical sciences.

The Graduate School of Liberal Arts and Sciences of Duquesne University offers programs through the School of Pharmacy leading to the Doctor of Philosophy degree in pharmaceutical chemistry, and Master of Science degree in the fields of pharmacy, pharmaceutical chemistry, and pharmacology-toxicology.

The School of Pharmacy directs the professional program leading to the Doctor of Pharmacy degree in Hospital Pharmacy. These graduates are qualified for placement in clinical pharmacy positions in hospitals across the nation.

Medical technologists work under the direction of a pathologist or clinical scientist. In the field of Medical Technology positions are available in hospital and industrial laboratories preparing tissue samples and slides for microscopic study, taking blood samples, storing plasma, and keeping records of tests.

In the field of Radiological Health, positions of health physicist are available in hospitals and any laboratories and industrial facilities which use radioisotopes.

PROGRAMS

BACHELOR OF SCIENCE IN PHARMACY

The School of Pharmacy offers a Bachelor of Science degree in Pharmacy upon completion of the undergraduate professional program. The first two years encompass many courses offered by the College of Liberal Arts and Sciences in addition to several professional courses. The latter three years of study are taught mainly by the pharmacy faculty, with electives being available from both that faculty and all other schools of the University. Students are enrolled in the School of Pharmacy for all years. Transfer students are enrolled according to qualifications up to the start of the third year of the five-year sequence. Legal requirements of all states are met with regard to graduation from an accredited college of pharmacy. Licensure in the several states may be acquired by meeting specific additional requirements of each particular state.

Residency Requirements

The pharmacy curriculum has been designed to provide a sequence of courses leading to professional competence. The minimum time period in which this may be accomplished has been determined by the faculty to be three years of full-time residency. This residency requirement for the final years of the professional curriculum is in accordance with a policy statement ratified by the American Association of Colleges of Pharmacy and followed by all colleges of pharmacy in establishing minimum residency requirements, as well as guidelines for professional education. The residency requirement is applicable to all students regardless of advanced standing status.

Curriculum

A minimum of 15 credits in the combined areas of humanities and social sciences is required for graduation from the School of Pharmacy (nine in the humanities, including theology, and six in the social sciences, including economics.) Courses for fulfilling the theology requirement are listed under the Department of Theology in the College of Liberal Arts and Sciences section of this Catalog. A minimum of 160 credits is required for graduation.

The faculty reserves the right to require completion of course clusters in the humanities and social sciences. Students may receive a list of the courses in each cluster from their advisors.

The student is cautioned to seek regular advice from the faculty and to keep a record of credits earned and the calculated averages. The School assumes no responsibility for such errors appearing in student records which may prevent the student from being graduated.

First Year

<i>Fall Semester</i>	D* L* C*	<i>Spring Semester</i>	D L C*
101 English Composition	3 - 3	102 English Composition	3 - 3
105 Mathematics	4 - 4	115 Mathematics	4 - 4
111 General Biology	3 4 4	112 General Biology	3 4 4
121 General Chemistry	3 4 4	122 General Chemistry	<u>3</u> <u>8</u> <u>5</u>
1 Pharmaceutical Orientation	<u>1</u> - <u>1</u>		13 12 16
	14 8 16		

Second Year

<i>Fall Semester</i>	D L C*	<i>Spring Semester</i>	D L C*
201 General Physics	4 2 4	202 General Physics	4 2 4
205 Organic Chemistry	3 4 4	206 Organic Chemistry	3 4 4
101 Elements of Economics	2 1 3	Humanities Elective	6 - 6
14 Pharmaceutical Math.	3 - 3	Theology or Elective	<u>3</u> - <u>3</u>
Social Science Elective	<u>3</u> - <u>3</u>		16 6 17
	15 7 17		

Third Year

<i>Fall Semester</i>	D L C*	<i>Spring Semester</i>	D L C*
11 Physical Pharmacy	3 4 4	12 Physical Pharmacy	3 4 4
13 Pharmaceutical Law	3 - 3	16 Biochemistry	3 3 4
17 Anatomy and Physiology	3 - 3	18 Anatomy and Physiology	4 - 4
20 Anatomy and Physiology Laboratory	- 3 1	35 Medical Microbiology	<u>3</u> <u>3</u> <u>4</u>
Elective	<u>3</u> - <u>3</u>		13 10 16
	12 7 14		

Fourth Year

<i>Fall Semester</i>	D	L	C*	<i>Spring Semester</i>	D	L	C*
21 Biopharmaceutics and Dosage Forms	4	-	4	22 Biopharmaceutics and Dosage Forms	4	8	4
33 Pharmacology	3	-	3	34 Pharmacology	4	-	4
26 Natural Products	3	3	4	28 Organic Pharmaceutical Analysis	3	-	3
27 Analytical Chemistry	<u>3</u>	<u>7</u>	<u>4</u>	37 Pharmacy Administration Elective	<u>3</u>	<u>-</u>	<u>3</u>
	13	10	15		17	8	17

Fifth Year

<i>Fall Semester</i>	D	L	C*	<i>Spring Semester</i>	D	L	C*
23 Medicinal Chemistry	3	-	3	24 Medicinal Chemistry	3	-	3
31 Professional and Clinical Practice	3	6	4	32 Professional and Clinical Practice	3	6	4
39 Practical Pharmacy I Elective	-	-	3	36 Public Health	3	-	3
	<u>-</u>	<u>-</u>	<u>6</u>	41 Practical Pharmacy II Elective	-	-	3
	6	6	16		<u>-</u>	<u>-</u>	<u>3</u>
					9	6	16

*D – Didactic hours L – Laboratory Hours C – Credit hours

Courses are to be completed in the designated sequence.

Minimum credits for B.S. in Pharmacy Degree – 160; sufficient elective courses must be taken to satisfy the minimum credit requirements.

Curriculum Majors

During the fourth year (earlier if possible) each pharmacy student is urged to select a curriculum major from one of the following major areas: Community Practice, Institutional Practice, Industrial Practice, Radiopharmacy, or Pre-Graduate Study.

The following courses are approved for the respective major areas:

1. *Community Practice*

29–Emergency Treatment
58–Community Practice I
59–Community Practice II
All–Psychology
All–Sociology

53–Clinical Pharmacy
201–Principles of Management
39, 41–Practical Pharmacy I, II
567, 568–Clinical Pharmacology

2. *Institutional Practice*

52–Hospital Pharmacy
53–Clinical Pharmacy
530–Principles of Hospital Management
501–Manufacturing Pharmacy
56–Clinical Chemistry

563–Pathology
201–Principles of Management
539–Bionucleonics
567-568–Clinical Pharmacology
39, 41–Practical Pharmacy I, II

3. *Industrial Practice*

501—Manufacturing Pharmacy
 505—Methods of Pharmaceutical
 Control
 562—Analytic Methods (Statistics and
 Computer Technology)

502—Pharmaceutical Formulation
 and Development
 539—Bionucleonics
 306—Applied Electronics Laboratory
 39, 41—Practical Pharmacy I, II

4. *Radiopharmacy*

19—Electronics for Health Sciences
 539—Bionucleonics
 540—Advanced Bionucleonics and
 Radio-Pharmaceuticals

541, 542—Radiological Health
 431—Introduction to Biostatistics

5. *Pre-Graduate Study*

Students who elect this option must consult with the chairman of the department of their area of interest in order to select courses most adaptable to the program they desire to pursue. A combined B.S./M.S. program is available to qualified students.

BACHELOR OF SCIENCE IN MEDICAL TECHNOLOGY

This program, leading to the degree B.S. in Medical Technology, is a joint effort between Duquesne University and Mercy Hospital, Pittsburgh, Pa. The program involves completion of 125 credits, with 30 of the credits being taken in Mercy Hospital's School of Medical Technology in the fourth year of the program. Graduates from the program are eligible for the National Examinations conducted by the Board of Registry of Medical Technologists.

The School of Medical Technology at Mercy Hospital is approved by the Board of Schools of Medical Technology which acts as adviser to the Council on Medical Education of the American Medical Association. It is responsible for establishing and maintaining high standards of education in A.M.A.-approved schools of medical technology.

Students in the program enroll in the School of Pharmacy as medical technology majors. These students are advised through the office of the Dean of the School of Pharmacy.

Admission to the fourth year of the program will be on a competitive basis with these as the determining factors:

1. A student must have a quality point average of 3.0 in the sciences.
2. No student with a grade lower than C in any chemistry course will be considered for admission.
3. Written recommendations.
4. Personal interview with the Education Coordinator of Mercy School of Medical Technology.

Applications for entrance to the fourth year are to be made before October 31 of the third year. Information about applications is available from the School Office or the Education Coordinator for Medical Technology.

During the fourth year of the program, students will register and pay tuition to Duquesne University. They will be permitted to reside in the

University dormitories and enjoy all of the privileges of Duquesne University students.

Failure in any of the major courses included in the fourth year will lead to immediate dismissal from the Mercy School of Medical Technology.

Curriculum

First Year

<i>Fall Semester</i>	D	L	C*	<i>Spring Semester</i>	D	L	C*
101 English Composition	3	-	3	102 English Composition	3	-	3
105 Basic Math	4	-	4	115 Calculus I	4	-	4
111 General Biology	3	4	4	112 General Biology	3	4	4
121 General Chemistry	<u>3</u>	<u>4</u>	<u>4</u>	122 General Chemistry	<u>3</u>	<u>8</u>	<u>5</u>
	13	8	15		13	12	16

Second Year

<i>Fall Semester</i>	D	L	C*	<i>Spring Semester</i>	D	L	C*
201 General Physics	4	2	4	202 General Physics	4	2	4
205 Organic Chemistry	3	4	4	206 Organic Chemistry	3	4	4
Humanities Elective	3	-	3	35 Medical Microbiology	3	3	4
Social Science Elective	3	-	3	Humanities Elective	<u>3</u>	<u>-</u>	<u>3</u>
Theology or Elective	<u>3</u>	<u>-</u>	<u>3</u>		13	9	15
	16	6	17				

Third Year

<i>Fall Semester</i>	D	L	C*	<i>Spring Semester</i>	D	L	C*
17 Anatomy and Physiology	3	-	3	16 Biochemistry	3	3	4
20 Anatomy and Physiology Laboratory	-	3	1	18 Anatomy and Physiology	4	-	4
27 Analytical Chemistry	3	7	4	19 Electronics for Health Sciences	3	3	4
Elective	<u>9</u>	<u>-</u>	<u>9</u>	Electives	<u>3</u>	<u>-</u>	<u>3</u>
	15	10	17		13	6	15

Fourth Year

The fourth year of the program will begin in June and continue for twelve consecutive months. Courses and laboratory assignments will be held primarily at Mercy Hospital. The following syllabus will be covered with 30 credits awarded for completion of the courses.

<i>Courses</i>	<i>Credits</i>	<i>Courses</i>	<i>Credits</i>
61 Clinical Chemistry	7	66 Parasitology	2
62 Urinalysis	2	67 Immunology	2
63 Hematology	5	69 Mycology	1
64 Blood Banking	3	70 Virology	1
65 Bacteriology	3	71 Nuclear Pathology	2
		Total	30

*D – Didactic hours L – Laboratory hours C – Credit hours

All of the required course work, laboratories, supplies, facilities, and faculty for the fourth year of the program will be provided by Mercy School of Medical Technology. The faculty of the School of Medical Technology is recognized as faculty at Duquesne University.

BACHELOR OF SCIENCE IN RADIOLOGICAL HEALTH

Since 1972 the School of Pharmacy has offered a four-year 123-credit program leading to a Bachelor of Science degree in Radiological Health. Graduates from the program qualify for positions of health physicist in any facilities using radioactive isotopes.

Students in the radiological health program enroll in the School of Pharmacy as radiological health majors. These students are advised through the office of the Dean of the School of Pharmacy.

Curriculum

First Year

<i>Fall Semester</i>	D	L	C*	<i>Spring Semester</i>	D	L	C*
101 English Composition	3	-	3	102 English Composition	3	-	3
105 Basic Mathematics	4	-	4	115 Calculus I	4	-	4
111 General Biology	3	4	4	112 General Biology	3	4	4
121 General Chemistry	<u>3</u>	<u>4</u>	<u>4</u>	122 General Chemistry	<u>3</u>	<u>8</u>	<u>5</u>
	13	8	15		13	12	16

Second Year

<i>Fall Semester</i>	D	L	C*	<i>Spring Semester</i>	D	L	C*
211 General Analytical Physics	3	3	4	212 General Analytical Physics	3	3	4
205 Organic Chemistry	3	4	4	206 Organic Chemistry	3	4	4
116 Calculus II	4	-	4	215 Calculus III	4	-	4
Theology or Elective	<u>3</u>	<u>-</u>	<u>3</u>	Humanities Elective	<u>3</u>	<u>-</u>	<u>3</u>
	13	7	15		13	7	15

Three credits in theology are required for all students.

Third Year

<i>Fall Semester</i>	D	L	C*	<i>Spring Semester</i>	D	L	C*
17 Anatomy and Physiology	3	-	3	16 Biochemistry	3	3	4
20 Anatomy and Physiology				18 Anatomy and Physiology	4	-	4
Laboratory	-	3	1	539 Bionucleonics	3	3	3
216 Differential Equations	3	-	3	Electives	<u>6</u>	<u>-</u>	<u>6</u>
225 Fundamentals of Statistics	3	-	3		16	6	17
Electives	<u>6</u>	<u>-</u>	<u>6</u>				
	15	3	16				

*D – Didactic hours L – Laboratory Hours C – Credit Hours

Fourth Year

<i>Fall Semester</i>	D	L	C*	<i>Spring Semester</i>	D	L	C*
306 Applied Electronics	1	2	2	411 Ecology	3	-	3
431 Intro. to Biostatistics	3	-	3	51 Radiological Health Practice	-	16	4
473 Atomic Physics	3	-	3	483 Nuclear Physics	3	-	3
540 Advanced Bionucleonics and Radiopharmaceuticals	3	3	3	542 Radiological Health II	<u>3</u>	<u>4</u>	<u>4</u>
541 Radiological Health I	<u>4</u>	<u>-</u>	<u>4</u>		9	20	14
	14	5	15				

ADMISSION

Students who plan to enter any of the programs offered by the School of Pharmacy are encouraged to meet with the Dean of the school for a personal interview. Entrance requirements are listed under Admission Policies in the General Information section of this catalog. Applications should be submitted as early in the year of matriculation as possible.

The National Pharmacy College Admissions Test (PCAT) may be taken by applicants. Results should be reported to the Admissions Office and to the School of Pharmacy. The test is not required for admission to the School, but the results are used by advisement personnel to assess the level of knowledge in pertinent areas related to the program. Superior performance in certain topics will alert the student to enroll for advanced placement examinations.

The School of Pharmacy admits students into each of the first three years of the pharmacy, medical technology and radiological health baccalaureate programs. Procedures for entrance are outlined under Application Procedures in the General Information section.

All transfer students must be interviewed by the Dean or Assistant Dean of the School of Pharmacy. Students intending to transfer into the School of Pharmacy should prepare themselves by completing the program of courses, or their equivalents, presented in the curricula of interest. Advisors at the School of Pharmacy are available to meet with students attending other institutions to suggest plans of study which will qualify them for future placement in the School's programs.

Pharmacy students in good standing at any accredited college of pharmacy and eligible to continue their studies at that institution may transfer to Duquesne University School of Pharmacy upon written recommendation of their Dean and fulfillment of all requirements for transfer students as determined by the Admissions Committee. In all cases transfer applicants must have been granted honorable dismissal from their previous institution and have the academic average currently required for admission to the programs in which they are interested.

*D – Didactic hours L – Laboratory Hours C – Credit Hours

Transfer pharmacy students must complete a minimum of three academic years of residence in the School of Pharmacy.

In extenuating circumstances and with the permission of the School of Pharmacy Student Standing Committee, a waiver of the three years of residence required by the American Association of Colleges of Pharmacy will be sought by the faculty on behalf of the student. Failure to request and obtain such a waiver requires the pharmacy students to complete a minimum of six semesters in residence as full-time students.

Advanced credit may be allowed for those courses which appear in the Duquesne curriculum. No credit is allowed in any subject in which a grade lower than C was earned or for a course not equivalent to one among the School's curricula. Transfer applicants must have completed a minimum of 30 credit hours for entrance into the second year and 60 credit hours for entrance into the third year.

Advanced standing is conditional until the student completes a minimum of one semester's work (16 semester hours). If his work proves unsatisfactory, the student will be requested to withdraw.

Applicants who have completed advanced courses in high school are encouraged to take advanced placement tests as detailed under College Level Examination Program in the General Information section.

LABORATORY FEES

Required laboratory courses scheduled by all schools of the university are subject to fees as published. Pharmacy laboratories require a fee of \$40 each a semester. This is a prorated charge derived from the total costs of all laboratory operations throughout the professional years. Other courses offered in the program of medical technology and radiological health are subject to special fees. No laboratory fees are assessed for courses scheduled in the fourth year of the medical technology program.

PHARMACY ACTIVITIES FEE

Instituted by student request, this fee of \$25 a semester covers such miscellaneous items as local and national Student American Pharmaceutical Association dues and journal subscription; laboratory jacket fees; class dues and support of the pharmacy student newsletter, *Phorum*; and travel expenses for one required field trip to a pharmaceutical manufacturing firm. Payment is made at registration each semester. This fee is assessed only to those students in the last three years of the pharmacy program.

REGULATIONS

Students in the School of Pharmacy are preparing themselves for entry into a respected health profession where the highest degree of character and sense of responsibility are basic requirements. As such, they are expected to conduct themselves, at all times, in a manner befitting this position and according honor to it. For these reasons, the School of Pharmacy insists on strict adherence to the following regulations:

1. *Class Attendance.* Regular class attendance is normally essential for maximum educational advantage and is strongly encouraged. The responsibility for all course material rests wholly with the student. Under no circumstances will class attendance be used as the basis for altering a grade in a course. This principle shall not modify the prerogative of each instructor to establish policy for attendance at tests, examinations, class lectures, deadlines for reports, and other specific school or course requirements.

A student who is absent is expected to complete all of the work in the course. It is the student's responsibility to make up all assignments and to be familiar with any instructions which may be given in his absence.

2. *Academic Standards.* All students who are admitted to the School of Pharmacy must maintain a 2.0 QPA (quality point average) in the required courses in the professional pharmacy curriculum, throughout the program. Students who do not achieve a 2.0 QPA by the end of the first professional year may be admitted to the second year on a probationary basis. No student will be admitted to the third, fourth, or fifth years of the program with less than 2.0 QPA.

3. *Required Programs.* Pharmacy students in the fourth year of the curriculum are required to participate in one industrial visit arranged by the School.

The School of Pharmacy arranges for students to participate in a special course in surgical appliance fittings offered by a field representative of a manufacturer of such devices. The biennial programs are required for all pharmacy students in the last two years of the curriculum. Record of participation is made in the students' permanent files.

STUDENT ORGANIZATIONS

The Student American Pharmaceutical Association whose membership includes all pharmacy students registered in the last three years of the School of Pharmacy aims to promote their interests, scholastic, social and professional. Under its auspices, many worthwhile events are arranged during the school year. The executive committee meets regularly with the Dean and the faculty moderator to act as liaison between students and faculty. The annual membership fee includes one year's student membership to the American Pharmaceutical Association and a year's subscription to its Journal. Interested pharmacy[students enrolled in their first and second years at the University are also eligible for membership.

The Alpha Beta Chapter of Rho Chi, national pharmacy honor society at Duquesne University, was organized to promote the advancement of the pharmaceutical sciences. Pharmacy students who have completed three and one-half years of work at the University level and have achieved a B average are eligible for membership. A maximum of 20 per cent of the class enrollment may be admitted to membership. Doctor of pharmacy candidates are eligible under the same conditions. Faculty and graduate students in the pharmaceutical sciences may also be invited to join.

Tau Chapter of Lambda Kappa Sigma, an international pharmaceutical fraternity for women, was established at Duquesne University in 1932. The organization numbers among its members some of the most outstanding women in pharmacy. Its purposes are to promote the profession of pharmacy and to create a center of culture and enjoyment for its members.

The Beta Gamma Chapter of Phi Delta Chi, an international professional pharmaceutical fraternity, was chartered at Duquesne University in 1960. The fraternity endeavors to integrate academic, spiritual and social activities and thereby foster the highest professional and personal ideals among its members. Membership is open to students in pharmacy.

The Delta Epsilon Chapter of Kappa Psi Pharmaceutical Fraternity was chartered in 1967. This international fraternity strives to develop industry, sobriety, and fellowship and to foster high ideals, scholarship, and pharmaceutical research while supporting all projects advancing the profession of pharmacy. Membership is open to students in pharmacy.

Class Organizations. Each of the five classes is an officially recognized organization in the School of Pharmacy. Each class elects its own officers and conducts such programs and affairs as its members deem desirable toward achieving its goals. All students are included in these organizations regardless of major curriculum.

HONOR AWARDS FOR GRADUATING STUDENTS

Allegheny Wholesale Drug Company Award. Annually an award of \$25 is presented to the graduate who has shown outstanding ability and interest in the field of pharmacognosy.

American Institute of the History of Pharmacy Award. A recognition certificate and gift membership is awarded annually by the American Institute of the History of Pharmacy for superior achievement in pharmacohistorical study or activity.

American Pharmaceutical Association Award. A certificate of recognition is presented annually to the graduate who has made the most significant contribution to the Student American Pharmaceutical Association at Duquesne University.

Bernard and Blanche Schiller Award in the Humanities and Social Sciences. Annually an award of \$25 is presented to the graduate who has demonstrated an understanding of the value of the humanities and social sciences in his development as a professional person. This award is to be used for the purchase of books on any aspect of the humanities in which the student is interested.

Mary McPartland Beck Award. An award of \$25 is presented annually to the graduate who has shown outstanding ability and interest in the clinical practice of pharmacy.

Bristol Award. An award is presented annually by the Bristol Laboratories, Inc., New York City, to a Doctor of Pharmacy candidate for excellence in scholastic achievement.

Bristol Award. A copy of a standard reference book is awarded annually by the Bristol Laboratories, Inc., New York City, to the graduate who has in the opinion of the faculty attained unusual distinction in the work in pharmaceutical administration.

Faculty Award. The faculty of the School of Pharmacy may present an appropriate award to an outstanding member of the graduating class who has displayed exceptional qualities of academic excellence and a QPA of over 3.75.

Maurice H. Finkelppearl Award. An award of \$50 is presented annually to a student who intends to practice Community Pharmacy.

Galen Society Award. The Galen Society of Pittsburgh annually offers two \$25 awards to the two members of the graduating class who have achieved the highest standing in the departments of pharmacology and pharmaceutical chemistry.

Samuel W. Curtis Award. Annually an award of \$25 is presented to the graduate who has shown outstanding ability and interest in the field of pharmaceutics.

Johnson and Johnson Award. A replica of a rare Revolutionary War Mortar and Pestle is awarded annually to an outstanding student of Pharmacy Administration.

Lilly Achievement Award. A gold medal is presented annually to a member of the graduate class who has demonstrated superior scholastic and professional achievement as well as qualities of leadership.

Merck Sharp and Dohme Award. Each year Merck and Company, Rahway, New Jersey, offers a set of valuable reference books to a member of the graduating class who attains the highest average in medicinal chemistry.

Rexall Award. The Rexall Drug Company of Los Angeles, California, annually awards a bronze mortar and pestle to a graduate who has demonstrated outstanding leadership and interest in the field of community pharmacy.

Rho Chi Award. Alpha Chapter of Rho Chi awards annually a suitably inscribed key to the student who earns the highest general average in all subjects during the first two years of the pharmacy program. It is presented at a meeting of the Student Chapter of the American Pharmaceutical Association.

Smith Kline & French Laboratories Award. A personalized plaque is presented annually by the Smith Kline & French Laboratories, Philadelphia, Pennsylvania, for superior achievement in Clinical Pharmacy.

James L. Strader Memorial Award. Each year Mrs. Joan V. Ansberry and Marshall Goldstein, proprietors of the James L. Strader Pharmacy, Pittsburgh, present a stainless steel replica of the awardee's diploma to the graduating student who has demonstrated outstanding general intelligence and maturity in the opinion of the graduating class.

Student American Pharmaceutical Association Award. Annually an award is presented to the graduating student who has demonstrated through service, reporting and activity, an avid interest in organization work.

Syntex Preceptor of the Year Award. An appropriately designed plaque is awarded annually by the Syntex Laboratories, Inc., of Palo Alto, California to the preceptor who, in the opinion of the Pharmacy Interns, best exemplifies professionalism, ethics, and clinical practice.

Upjohn Award. A suitably inscribed plaque is awarded annually by the Upjohn Company, Kalamazoo, Michigan, for outstanding public service.

Western Pennsylvania Society of Hospital Pharmacists Award. Annually an award of \$25 is presented to the graduating senior who demonstrates outstanding ability and interest in the area of Hospital Pharmacy.

GRADUATION REQUIREMENTS

A committee of the faculty will review the record of each candidate for graduation to ascertain full compliance with specific School of Pharmacy curriculum requirements and the general University Graduation Requirements, as stated on page 210 of this catalog. This committee will then recommend candidates for faculty certification for graduation or for remedial work to be fulfilled during the last semester of residence. Communications pertaining to this certification may be entered in the Office of the Dean.

STATE LICENSING

PENNSYLVANIA

A candidate for licensure as a Registered Pharmacist in the Commonwealth of Pennsylvania must meet the following requirements before he may be admitted to the licensing examinations which are conducted by the Pennsylvania State Board of Pharmacy:

1. Character—be of good moral character.
2. Professional Training—have a degree in Pharmacy granted by a School or College of Pharmacy, which is accredited by the American Council on Pharmaceutical Education.
3. High School Preparation—have a State Preliminary Certificate certifying to not less than four years of high school work, or the equivalent in approved subjects. The certificate must bear a date not later than November 1 of the year of matriculation.

As evidence of State approval, the candidate must present before November 1 of the year in which the third year of course work in Pharmacy is begun, a Pennsylvania State Preliminary Certificate issued by the Pennsylvania Department of Education at Harrisburg. Such certificates are granted, upon payment of a \$5.00 fee to the State, to candidates who have completed an approved four-year high school course. Full instructions for securing the certificate are provided through the School of Pharmacy office to students entering that year. Applicants who cannot satisfy the requirements by furnishing certified records from accredited high schools may make up deficiencies by passing the examinations given for this purpose by the Credentials Evaluation Division of the Department of Education of the Commonwealth of Pennsylvania. Further information regarding these

examinations, fees, dates, etc. may be obtained by writing to the Credentials Evaluation Division, Department of Education, Commonwealth of Pennsylvania, Box 911, Harrisburg, Pennsylvania 17120.

4. Practical Experience and Internship—any person enrolled as a student of pharmacy in an accredited college shall at the end of the second year of College file with the State Board of Pharmacy an application for registration as a pharmacy intern.

To insure proficiency in the practical aspects of pharmacy, the State Board shall by regulation prescribe internship requirements which must be satisfactorily completed prior to issuance of a Pharmacist's License. The Board shall specify the period of time of not less than six months nor more than one year and when and in what manner the internship shall be served.

Specific information concerning practical experience requirements as well as all other requirements concerning licensure may be obtained from the State Board of Pharmacy, Department of State, Box 2649, 279 Boas Street, Harrisburg, Pennsylvania 17120.

STATES OTHER THAN PENNSYLVANIA

According to law, the licensing of an applicant seeking to become registered as a pharmacist is under the sole jurisdiction of the state in which he seeks to practice. Although the requirements for licensure in the Commonwealth of Pennsylvania are similar to those of other states, differences may exist. Space limitations preclude a complete listing of the requirements of other states and the District of Columbia here. The candidate for licensure in another state is advised to consult the Board of Pharmacy in that particular state for complete information.

PHARMACY CAREER GUIDANCE CENTER

A Guidance Center has been established within the School of Pharmacy to keep students informed about the latest career opportunities available to those possessing a pharmacy education and to attract high school and junior college students to the profession.

The Center consists of faculty members, School of Pharmacy alumni, and pharmacy practitioners. It provides upon request speakers for career day programs and information to high school counselors on all matters relating to a pharmacy education and career.

Pamphlets containing career information on pharmacy are also available through the Guidance Center. Inquiries should be directed to the Pharmacy Career Guidance Center, School of Pharmacy, Duquesne University, Pittsburgh, Pennsylvania 15219.

RESEARCH FOUNDATION

The Hugh C. Muldoon and Pharmacy Alumni Foundation of Duquesne University, established in 1950 to celebrate the twenty-fifth anniversary of the founding of the School of Pharmacy, is an increasingly valuable aid in

helping to achieve the aims of the University and of the School of Pharmacy. The foundation provides funds for improving the instructional and research facilities of the School; it assists in the advancement of pharmacy by supporting the training of undergraduate and graduate students in industrial and research procedures; it helps to extend the knowledge from research being conducted under the auspices of the School. Contributions are solicited from graduates and others interested in the work of the Foundation. They may be addressed in care of the School of Pharmacy.

COURSE DESCRIPTIONS

The courses of instruction are numbered in accordance with a plan uniform throughout the University.

Courses numbered 100 are Freshman courses; 200 Sophomore; 300 Junior; 400 Senior. Courses numbered 10 through 71 reflect required courses in the professional curriculum. Courses numbered 500 are graduate level courses in which qualified undergraduate students may be enrolled with the permission of the Dean of the Graduate School. Credit for these courses cannot be used to satisfy requirements for a second degree.

Course descriptions for the liberal arts and science courses may be found in the section of this catalog under the heading College of Liberal Arts and Sciences and School of Business and Administration.

DEPARTMENT OF PHARMACEUTICAL CHEMISTRY AND PHARMACEUTICS

Chairman: MITCHELL L. BORKE, Ph.D.

Associate Chairman: ALVIN M. GALINSKY, Ph.D.

1. PHARMACEUTICAL

ORIENTATION.

1 cr.

Introduction to pharmacy. Discussion of various phases of pharmacy and their relationship to the profession as a whole. Pharmaceutical organizations are discussed and evaluated. The pharmaceutical literature is discussed and a brief history of pharmacy is presented. Lecture, one hour.

11. PHYSICAL PHARMACY.

4 cr.

A course designed to acquaint the student with the theory upon which the principles and processes of pharmacy are based. The theories of emulsification, drug extraction, isotonicity, hydrogen ion concentration, rheology, micromeritics, etc. are discussed and the instruments which are used in their measurements are

described and utilized in the laboratory.

Prerequisites: Mathematics 115, general physics; organic chemistry (concurrent registration in organic chemistry may be accepted). Lecture, three hours; Laboratory, four hours.

12. PHYSICAL PHARMACY.

4 cr.

A continuation of Physical Pharmacy 11. Prerequisite: Physical Pharmacy 11. Lecture, three hours; Laboratory, four hours.

14. PHARMACEUTICAL

MATHEMATICS.

3 cr.

A course designed to familiarize the student with the mathematical problems and calculations encountered in pharmaceutical practice. Lecture, two hours; Recitation, one hour.

16. BIOCHEMISTRY.**4 cr.**

Designed to emphasize primarily the manner in which energy is derived from food. Metabolisms of carbohydrates, lipids, and proteins are discussed and interrelated. The function of enzymes, vitamins, and hormones is discussed in relation to their role in metabolism. The relationship of biochemistry to disease states is stressed. Prerequisite: Organic Chemistry. Lecture, three hours; Laboratory, three hours.

**19. ELECTRONICS FOR
HEALTH SCIENCES.****4 cr.**

A course for science students who have little or no background in electronics but who need a working knowledge of electronic devices and circuitry. Principles of electronics, servo-mechanisms, operational amplifiers, and digital control problems are covered. Prerequisites: Calculus I, general physics. Class, three hours; Laboratory, four hours.

**21. BIOPHARMACEUTICS AND
DOSAGE FORMS.****4 cr.**

A study of the physio-chemical, biological, and pharmaceutical factors which affect absorption, distribution, metabolism, and excretion of drugs in man. Emphasis is placed on the utilization of biopharmaceutical and pharmacokinetic knowledge in problems of bioavailability and bioequivalence of drug products and in the determination of appropriate drug dosage regimens. Prerequisite: Physical Pharmacy 12. Lecture, four hours.

**22. BIOPHARMACEUTICS AND
DOSAGE FORMS.****4 cr.**

A continuation of Biopharmaceutics and Dosage Forms 21 with emphasis on drug delivery systems. Prerequisite: Biopharmaceutics and Dosage Forms 21. Lecture, four hours; Laboratory, seven hours; Recitation, one hour.

23. MEDICINAL CHEMISTRY.**3 cr.**

Relationship between chemical structure and the biological action of drug molecules. Emphasis is on underlying principles as well as on specific therapeutic agents. Organization is by pharmacological classification, with chemical properties relating to mechanism of action, stability, biodistribution and metabolism considered for each class. Lecture, three hours. Prerequisites: Physical Pharmacy 11, 12, or its equivalent.

24. MEDICINAL CHEMISTRY.**3 cr.**

A continuation of Medicinal Chemistry 23. Prerequisite: Medicinal Chemistry 23. Lecture, three hours.

27. ANALYTICAL CHEMISTRY.**4 cr.**

Rigorous training in stoichiometric relationships and in the application of equilibrium principles, with laboratory experience in the principal methods of gravimetric and volumetric analysis. Prerequisites: Physical Pharmacy 11, 12 or Physical Chemistry. Lecture, three hours; Laboratory, seven hours.

**28. ORGANIC PHARMACEUTICAL
ANALYSIS.****3 cr.**

A course devoted to the identification and determination of the relative amounts of active constituents in pharmaceutical and medicinal substances. Prerequisite: Analytical Chemistry 27. Lecture, three hours.

**499. INDEPENDENT STUDY
AND RESEARCH.****1-2 cr./sem.**

Opportunity for students to carry out independent study or research under the supervision of a faculty member. Requires detailed study of a subject area related to the professional goal of the student. The development of a skill is mandatory and the student is evaluated on a competency basis. Maximum of four credits. Registration by permission of instructor.

DEPARTMENT OF PHARMACOGNOSY

Chairman: NORBERT A. PILEWSKI, Ph.D.

26. NATURAL PRODUCTS. 4 cr.

Deals with the important medicinal agents which are derived from natural sources. Emphasis is placed on the medicinally important antibiotics, alkaloids, glycosides, volatile oils, fixed oils, vitamins, carbohydrates, and enzymes; includes a description of the natural source of the drug, its precise chemical nature, its pharmacological effect on the body, and its importance in medicine today. Prerequisite: Organic chemistry. Lecture, three hours; Laboratory, three hours.

35. MEDICAL MICROBIOLOGY. 4 cr.

Covers the general characteristics and morphology of bacteria, the important staining techniques, methods of growing bacteria on artificial media, and testing the effects of chemotherapeutic agents on pathogenic bacteria. It includes discussions of the important bacterial, rickettsial, bedsonial, viral,

and protozoal diseases along with worm infestations, their causes, symptoms, and treatments. Lecture, three hours; Laboratory, three hours.

36. PUBLIC HEALTH. 3 cr.

A discussion of Public Health measures such as immunization, water purification, sewage disposal, treatment of contaminated individuals and objects, control of rodents and insects, and the relationship of these to the spread of disease. Health statistics, disaster preparedness, and environmental pollution are also discussed. Lecture, three hours.

130. HISTORY OF PHARMACY. 2 cr.

A survey of the origins of science, medicine, and pharmacy from the earliest recorded events to the present with emphasis on nineteenth and twentieth century pharmacy in the United States. Lecture, two hours.

DEPARTMENT OF PHARMACOLOGY-TOXICOLOGY

Chairman: GENE A. RILEY, Ph.D.

2. DRUG ABUSE. 1 cr.

A course designed to present the pharmacological and toxicological properties of substances of abuse. The major classes of drugs are described with direct reference to toxic and adverse effects. The myths and misconceptions commonly attributed to some substances of abuse are clarified. The philosophy of the course is to present an objective picture of the "drug abuse era" in this country. The course is intended for all students beginning their collegiate studies. Admission to this course for students who have completed Pharmacology 33 or its equivalent is by approval of the instructor.

3. BASIC PHARMACOLOGY. 3 cr.

A course dealing with the major classes of

therapeutic agents, designed for students with a limited background in biological sciences. Drugs are considered from a "disease state" point of view and include basic mechanisms of action. Important drug interactions as they relate to patient care are included. Not open to Pharmacy Students. Prerequisites: Six credits of biological science, including physiology. Lecture, three hours.

4. SOCIAL DISEASES. 1 cr.

Causes, course of diseases, prevention, treatment and social effects of venereal diseases. Awareness and common sense should be awakened in students by the course. Lecture, one hour a week. Open to students who have not completed Pharmacy 33.

**17. ANATOMY AND
PHYSIOLOGY.****3 cr.**

An integrated course of the structure and function of tissues and organs. The various organ systems of vertebrate species are discussed as integrated functional units. Prerequisite: General Biology 112; Lecture, three hours.

**18. ANATOMY AND
PHYSIOLOGY.****4 cr.**

A continuation of Anatomy and Physiology 17. Prerequisite: Anatomy and Physiology 17 and 20. Lecture, four hours.

**20. ANATOMY AND PHYSIOLOGY
LABORATORY.****1 cr.**

Lecture presentations of gross anatomy and laboratory procedures including the micro-

scopic examination of tissues, hematology and the clinical appraisal of physiological functions. Laboratory-lecture, three hours.

33. PHARMACOLOGY.**3 cr.**

A basic course in pharmacodynamics and pharmacotherapeutics. Special emphasis is placed on its sites and mechanisms of action of therapeutic agents. Prerequisites: Anatomy and Physiology 17, 18. Lecture, three hours.

34. PHARMACOLOGY.**4 cr.**

A continuation of Pharmacology 33. Prerequisite: Pharmacology 33. Lecture, four hours.

40. PHARMACOLOGY.**3 cr.**

A continuation of Pharmacology 34. Lecture, three hours.

DEPARTMENT OF PHARMACEUTICAL ADMINISTRATION

Chairman: ANTHONY J. AMADIO, M.B.A.

**12. PHARMACEUTICAL
LAW.****3 cr.**

A course designed to acquaint the student with the philosophy of law and its relationship to pharmacy. Federal, state, and local laws and regulations pertinent to the handling and sale of drugs, cosmetics, narcotics, poisons, and alcohol are discussed. A review of antitrust laws, fair-trade regulations, and other court decisions of importance to the pharmacist is included. Elements of Business law and civil responsibilities of the pharmacist are also discussed. Lecture, three hours.

37. PHARMACY ADMINISTRATION.**3 cr.**

A course designed to familiarize the student with the diverse social, political, economic, and

legal forces affecting the practice of pharmacy. The course considers the persons, places, and activities involved in providing health care services with special emphasis on the role of the community pharmacist. Lecture, three hours.

39. PRACTICAL PHARMACY I.**3 cr.**

Practical Pharmacy Program required of all final year pharmacy students and involving placement in operating pharmacies with a pharmacist preceptor. Off-campus placement may be necessary. Note: calendar change for fifth year students may be required.

41. PRACTICAL PHARMACY II.**3 cr.**

An extension of Practical Pharmacy 39 required for all final year students.

DEPARTMENT OF CLINICAL PHARMACY

Chairman: THOMAS MATTEI, Pharm.D.

31. PROFESSIONAL AND

CLINICAL PRACTICE.

4 cr.

A course designed to prepare the student for professional pharmacy practice. Didactic, laboratory and clinical experiences are integrated to develop the student's ability in providing pharmaceutical services to patients and to other members of the health team. Emphasis is placed on the use of modern medicinals in a variety of patient, sociological and disease situations. Advanced teaching techniques utilizing case discussions, the computer and clinical interactions with patients requires

the student to pool his background of social, physical and biological sciences in dealing with complications of modern drug therapy. Prerequisite: Biopharmaceutics and Dosage Forms 22. Lecture, three hours; Laboratory, six hours.

32. PROFESSIONAL AND

CLINICAL PRACTICE.

4 cr.

A continuation of Professional and Clinical Practice 31. Prerequisite: Professional and Clinical Practice 31. Lecture, three hours; Laboratory, six hours.

DEPARTMENT OF MEDICAL TECHNOLOGY

Director: JEANNE A. COOPER, M.D.

Education Coordinator: EILEEN STEELE, M.T. (ASCP)

61. CLINICAL CHEMISTRY.

7 cr.

A comprehensive study of the chemistry and metabolism of proteins, carbohydrates, lipids, and electrolyte, enzyme, and hormone systems as revealed by the various examinations performed on blood and other body fluids.

culture methods, biochemical and immunological aspects of identification, and the application of these to the disease state.

62. URINALYSIS.

2 cr.

The study of renal function and its abnormalities as portrayed by alterations in the composition of the urine.

66. PARASITOLOGY.

5 cr.

Methods of identification of the various parasites infesting man, with detailed study of their morphology and habitat.

63. HEMATOLOGY.

5 cr.

Detailed study of the anatomy and physiology of the blood and various laboratory methods used in establishing inherited or acquired abnormalities of blood or blood forming organs.

67. IMMUNOLOGY.

2 cr.

Study of the procedures used in analysis of immune mechanisms of the body, and their application in disease processes.

64. BLOOD BANKING.

3 cr.

Essentials and importance of proper selection of blood for transfusion, pretesting methods, records, and administration of blood. Also included are studies of tests pertaining to isosensitization.

69. MYCOLOGY.

1 cr.

The study of the pathogenic fungi, the diseases they cause, and the technical methods of identification.

65. BACTERIOLOGY.

5 cr.

The study of clinical bacteriology, including

70. VIROLOGY.

1 cr.

The study of the viruses causing disease and the technical methods of identification.

71. NUCLEAR PATHOLOGY.

2 cr.

The study of the use of radiosotopes in the diagnosis and treatment of disease.

DEPARTMENT OF RADIOLOGICAL HEALTH

Chairman: MITCHELL L. BORKE, Ph.D.

51. RADIOLOGICAL HEALTH

PRACTICE.

4 cr.

Designed to provide the student with practical experience in at least four broad areas of radiological health: industrial, hospital, reactor, and university. This experience will be acquired through observation and participation in daily practical problems of radiation protection within local organizations representative of the four broad areas of radiological health. Emphasis will be placed on personnel monitoring and dosimetry, radiochemical assaying of biological and environmental materials, field surveying of plant operations involving large quantities of fission products and other radioactive materials, environmental monitoring practices, decontamination procedures, and radiation protection record keeping. Prerequisites: Bionucleonics 539; Radiological Health 541; Co-requisite: Radiological Health 542; Laboratory, 16 hours.

306. APPLIED ELECTRONICS

LABORATORY.

2 cr.

This course seeks to combine a treatment of the principles of modern electronic instrumentation with practical laboratory experience. Topics which will be included are: passive and active electronic components, electronic measuring instruments, power supplies, amplification, feedback and control, impedance matching, linear and digital devices. Emphasis will be on proper use of instrumentation rather than on advanced principles of design. Prerequisite: Permission of instructor.

539. BIONUCLEONICS.

3 cr.

A study of the fundamental techniques of manipulation and measurement of radioisotopes. Experiments performed individually by each student include: measurement of radioactivity with G-M counters, flow counters, ionization chambers, proportional counters, crystal and liquid scintillators; study of the characteristics of radiation, gamma spectrometry; some applications of radioisotopes in pharmacy, chemistry, biology, etc. Prerequisites: Chemistry 121, 122, Physics 211, 212.

540. ADVANCED BIONUCLEONICS AND RADIO- PHARMACEUTICALS.

3 cr.

A course devoted to the practical applications of radioactive isotopes in chemistry, biology, pharmacy, and medicine. The scope of the course includes neutron activation analysis, gamma spectrometry, tracer methods, and radiopharmaceuticals. Prerequisite: Bionucleonics 539.

541, 542. RADIOLOGICAL HEALTH I AND II.

4 cr. each

A course designed to review the fundamental physical and biological principles of radiation protection, and the application of these principles to the measurement techniques, radiation hazard evaluation, radiation protection surveillance and administration. Scientific principles most applicable to solving problems of protecting humans from unacceptable levels of radiation exposure both in occupational and public environment are emphasized.

RECOMMENDED PROFESSIONAL ELECTIVES

The following elective courses are taught in the School of Pharmacy and may be chosen by students who have met the prerequisites.

29. EMERGENCY TREATMENT.**3 cr.**

A lecture-demonstration course. The course teaches how to render first-aid cases of emergency, while awaiting the arrival of a physician. Special emphasis is placed on emergencies which the pharmacist is most likely to be confronted with, e.g. epileptic seizures, heart attacks, fainting, diabetic coma, etc. Prerequisites: Anatomy and Physiology 17 and 18. Lecture, three hours; demonstrations included during lecture hours.

52. HOSPITAL PHARMACY.**3 cr.**

An introductory course designed to acquaint the student with the history, organization, and development of pharmacy practice in hospitals. The responsibilities of the pharmacy service in the modern hospital are discussed. Field trips to area hospitals complement the lecture material. Prerequisite: Physical Pharmacy 12. Lecture, three hours.

54. STERILIZATION AND PARENTERAL PHARMACEUTICALS.**1 cr.**

Sepsis and asepsis, sterilization, bacterial filtration, pyrogen and sterility testing. Class size limited to 18 students. Laboratory, 16 hours. Prerequisite: Physical Pharmacy 12.

53. ADVANCED CLINICAL PHARMACY.**3 cr.**

A course designed to present the pharmacy student with actual patient-drug relationships as observed in the hospital. Lecture, one hour; Recitation, one hour; Laboratory, three-four hours.

56. CLINICAL CHEMISTRY.**3 cr.**

A course adapted to familiarize the student with qualitative and quantitative determinations of biochemical body constituents in order that the information may be utilized in clinical medicine. Prerequisite: Biochemistry 16. Lecture, three hours; Laboratory, four hours.

58. COMMUNITY PRACTICE I.**3 cr.**

The course considers the principles and functions of management as applied to a community pharmacy operation so that the objectives of the pharmacist-manager are attained with maximum efficiency. Prerequisite: Pharmacy Administration 37. Lecture, three hours.

59. COMMUNITY PRACTICE II.**3 cr.**

The course concerns itself with the operational aspects of a community pharmacy with emphasis on the business or commercial matters pertinent to a successful operation. Prerequisite: Pharmacy Administration 37; Lecture, three hours.

Any course taught in the University may be chosen as an elective course by students who have met the prerequisites.

The following courses offered by the Graduate Department of Pharmaceutical Sciences are available to qualified upperclassmen in the School of Pharmacy.

501. MANUFACTURING PHARMACY.**510. ADVANCED BIOPHARMACEUTICS.****502. PHARMACEUTICAL FORMULATION AND DEVELOPMENT.****523, 524. MEDICINAL CHEMISTRY.****505. METHODS OF PHARMACEUTICAL CONTROL.****525. ELECTRONICS FOR SCIENTIFIC INSTRUMENTATION.**

539. BIONUCLEONICS.

540. ADVANCED BIONUCLEONICS AND
RADIO PHARMACEUTICALS.

541, 542. RADIOLOGICAL HEALTH.

543. BIostatISTICS AND
EPIDEMIOLOGY.

560. BIOSYNTHESIS OF NATURAL PRODUCTS.

561. GENERAL TOXICOLOGY.

563. PATHOLOGY.

567, 568. CLINICAL PHARMACOLOGY.

569. TOXINS: THEIR CHEMISTRY,
BIOLOGY, AND TOXICOLOGY.

Descriptions of these courses may be found in the Graduate School
of Liberal Arts and Sciences Catalog.

RECOMMENDED ELECTIVES FOR RADIOLOGICAL HEALTH

103. LOGIC.

111. INTRODUCTION TO
PHILOSOPHY.

102. ETHICS.

101. INTRODUCTION TO
POLITICAL SCIENCE.

312. INTERNATIONAL LAW
AND ORGANIZATION.

103. GENERAL PSYCHOLOGY I.

101. SURVEY OF SOCIOLOGY.

201, 202. ENGLISH LITERATURE.

231, 232. DEVELOPMENT OF THE
UNITED STATES.

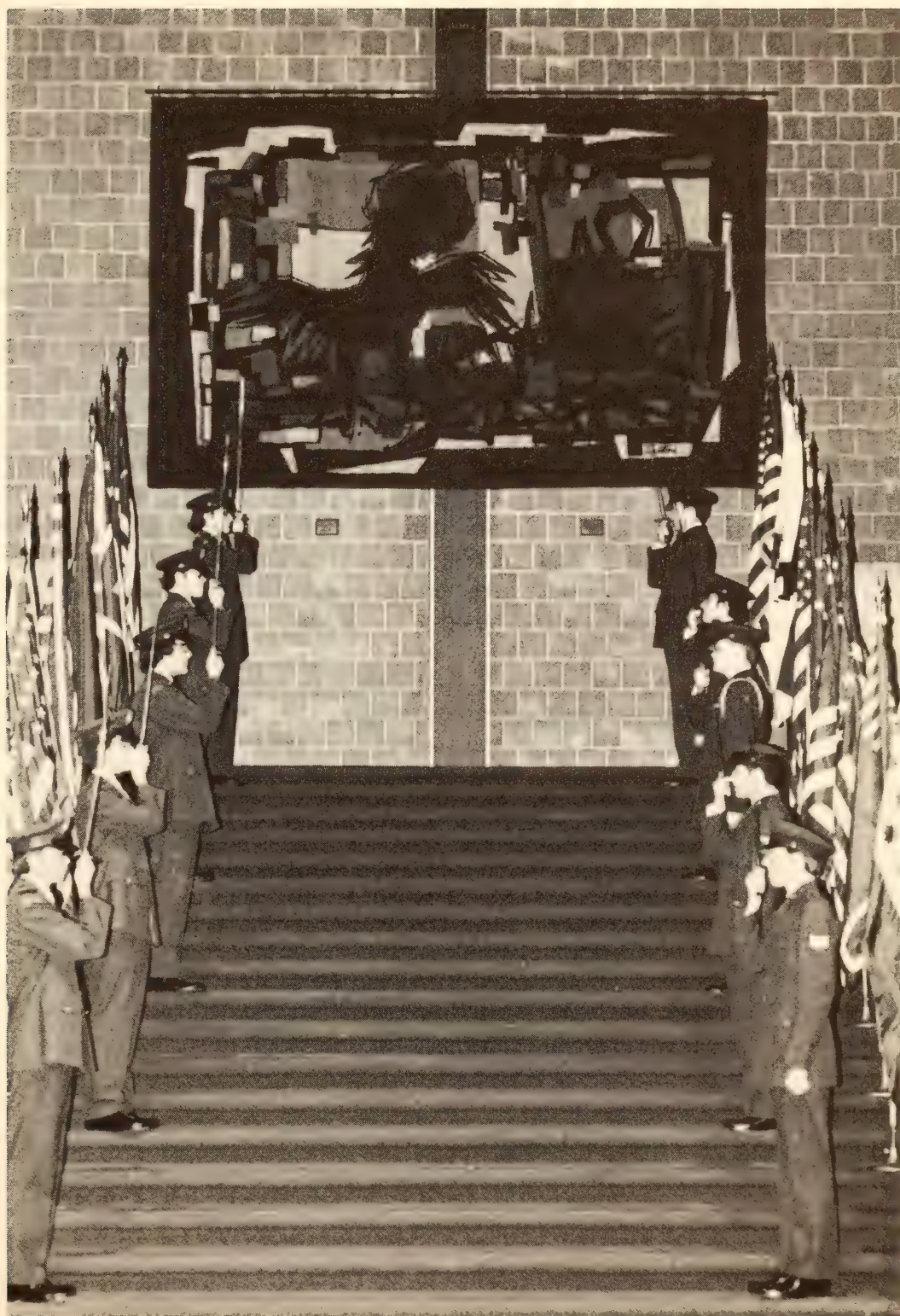
307, 308. HISTORY OF SCIENCE.

201. SPEECH AND PHONETICS.

202. SPEAKING AND LISTENING.

101. ELEMENTS OF ECONOMICS.

203. GENETICS.



Reserve Officer Training Corps

DEPARTMENT OF MILITARY SCIENCE

Department Head: COLONEL JAMES R. BAMBERY, USA

PROGRAMS

The Army Reserve Officer Training Corps (ROTC) program is open to male and female students on a voluntary basis. Two-year and four-year programs are offered; both are taken in conjunction with the required course of study in all the University's undergraduate degree programs. Interested incoming students are encouraged to enroll immediately so that the ROTC program and their academic major are phased properly for graduation. For entry into the two-year program, the student must have two academic years remaining, either at the undergraduate or graduate level, or a combination of the two. After successful completion of the four-year or two-year program, a student will be commissioned a second lieutenant in the United States Army. The Professor of Military Science invites letters or telephone calls of inquiry. Questions will be answered promptly.

FOUR-YEAR

All four-year program students are encouraged to take two of the following four courses during their freshman and sophomore years:

HIS. 348. MODERN AMERICAN MILITARY HISTORY.	3 cr.	POL. SCI. 215. NATIONAL STRATEGY.	3 cr.
SOC. 195. THE MILITARY AND SOCIETY.	3 cr.	MS 302. DEFENSE MANAGEMENT	3 cr.

In addition freshman and sophomore students are required to take Military Science Professional Laboratories 001, 002, 003, 004 (one a semester).

Advanced Course students (juniors) are encouraged to take:

MS 301. THE DYNAMICS OF GROUP PRESENTATIONS.	3 cr.
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Advanced Course students (juniors and seniors) are required to take:

MS 401. PROFESSIONAL
SEMINAR. 3 cr.

MS 005, 006, 007, 008.
PROFESSIONAL LABORATORIES
(one a semester) 0 cr.

SAMPLE PROGRAM

Freshman Year

<i>Fall Semester</i>		<i>Spring Semester</i>	
<i>Courses</i>	<i>Credits</i>	<i>Courses</i>	<i>Credits</i>
Academic Major	12	Academic Major	15
Military Subject or approved elective	3	MS 002 Professional Laboratory	0
MS 001 Professional Laboratory	0		
	15		15

Sophomore Year

Academic Major	15	Academic Major	12
MS 003 Professional Laboratory	0	Military Subject or approved elective	3
		MS 004 Professional Laboratory	0
	15		15

Junior Year

Academic Major	15	Academic Major	12
MS 005 Professional Laboratory	0	MS 301 Dynamics of Group Presentations	3
		MS 006 Professional Laboratory	0
	15		15

Summer

Attendance at six-week ROTC Advanced Camp

Senior Year

Academic Major	12	Academic Major	15
MS 401 Professional Seminar	3	MS 008 Professional Laboratory	0
MS 007 Professional Laboratory	0		
	15		15

TWO-YEAR

All students in the two-year program are required to successfully complete the six-week ROTC Basic Summer Camp prior to their last four semesters at the University and to fulfill all requirements of the Advanced Course.

MILITARY SCIENCE MINOR

The introductory course for the minor is History 348, Modern American Military History (no credit toward the minor). The required, three-credit hour courses are Sociology 195-The Military and Society; Political Science 215-National Strategy; and Defense Management. To complete the minor, *one* elective must be selected from among the following:

College of Liberal Arts and Sciences

History

231. DEVELOPMENT OF THE
U.S. TO 1877.

232. DEVELOPMENT OF THE
U.S. SINCE 1877

356. DIPLOMATIC HISTORY OF
THE UNITED STATES

358. CIVIL WAR AND
RECONSTRUCTION

Political Science

309. INTERNATIONAL RELATIONS

315. POLITICS OF THE
EMERGING NATIONS

Psychology

226. DEVELOPMENTAL PSYCHOLOGY II –
ADOLESCENCE AND MATURITY

340. SOCIAL PSYCHOLOGY

Speech

300. ARGUMENTATION AND DEBATE

304. PERSUASION

School of Business and Administration

201. PRINCIPLES OF
MANAGEMENT

309. ADMINISTRATIVE
ORGANIZATION

AIR FORCE ROTC

The Air Force ROTC program is offered on a cross-enrollment basis at the University of Pittsburgh. Students interested in Air Force ROTC should contact the Department of Aerospace Studies, University of Pittsburgh for detailed information and enrollment procedures.

ARMY ROTC SCHOLARSHIPS

Army ROTC offers a number of scholarships for cadets enrolled in the four-year and two-year programs. These scholarships include tuition, fees, and textbooks. For details see ROTC Scholarships in the Financial Aid section, page 193.

COURSE DESCRIPTIONS

BASIC COURSE

HIS. 348. MODERN AMERICAN MILITARY HISTORY.

3 cr.

The course will systematically study modern U.S. conflicts from 1914 to the present. The course focuses on the political, social and economic conditions leading to each major conflict; evaluates in general terms the conduct of military operations, and assesses the impact of the conflict upon the nation. Special emphasis is placed upon the role of the U.S. as a world leader, modernization of the Armed Forces, military-business relationships, selective service, and public opinion.

SOC. 195. THE MILITARY AND SOCIETY.

3 cr.

To relate to the student the military's social processes and organizational setting. To treat the military profession as an object of social inquiry, to enable the student to gain a fuller and more accurate assessment of the military. Furthermore, to attempt to present the military as objectively as possible. In addition, the fundamental changes that the American military has undergone in the 1960's and 1970's will be presented and how these changes

relate to the civilian environment. Prerequisite: Soc. 101.

POL. SCI. 215. NATIONAL STRATEGY.

3 cr.

In examining national security strategy, analysis will address such independent variables as qualitative and quantitative power factors, perceptions, physical and subjective bargaining capability, and the external and internal environment. Attention is focused also on the perceived institutional role of the military and its impact on the evolution of strategy with particular emphasis placed on the national strategies of the United States in the post World War II era.

MS 302. DEFENSE MANAGEMENT.

3 cr.

This course will examine the defense structure as a hybrid organization responsible to and dependent upon two opposing segments of American society: 1) Elected and appointed officials; 2) Representatives from private enterprise. This unique interaction provides added dimension to organizational theory, motivation, communication, and management practices.

ADVANCED COURSE

MS 301. DYNAMICS OF GROUP PRESENTATIONS.

3 cr.

Designed to give students opportunities to improve their techniques of oral instruction through formalized teaching and practical exercises. Topics for student presentations will relate to the theories of leadership as they apply to the learning process.

MS 401. PROFESSIONAL SEMINAR.

3 cr.

Designed to give the student facts about career development, the finer points of military organization, operations and tradition, and financial planning for himself/herself and a family. In addition the student will have op-

portunity to broaden his/her experience in Command and Staff procedures.

PROFESSIONAL LABORATORIES.

0 cr.

MS 001, 002. UNITED STATES ARMY ORIENTATION.

MS 003, 004. PRESENTATION OF MILITARY SKILLS.

MS 005, 006. ADVANCE CAMP PREPARATION.

MS 007, 008. COMMAND AND STAFF DEVELOPMENT.



Part III: Student Services, Programs and Organizations





Student Services, Programs and Organizations

DEVELOPMENTAL SERVICES

CAMPUS MINISTRY

In conjunction with the academic pursuits of the University, the Pastoral Office of Campus Ministry through its staff offers many opportunities for the student to be active in his religious development and continued spiritual growth by seeking ways of working out his relationship and responsibility to God and neighbor.

A varied schedule of daily and weekend Liturgies is provided. Priests are available for the Sacrament of Penance at regularly scheduled times and individually at any other pre-arranged time. The University Chapel remains open each day for prayer, reflection, and meditation. Evenings of recollection, weekend retreats, informal discussions and conversations, counseling, guest lecturers, and other special programs are some of the current activities of Campus Ministry. Open concerts of sacred music and recitals are given periodically during the year at the chapel.

All Campus Ministry activities are posted on the bulletin boards outside the chapel and in the Main Lobbies of each Residence Hall.

Students should feel free to stop in the Campus Ministry office at any time in the Administration Building (1st floor) or in the main lobby of the Towers.

CENTER FOR ACADEMIC AND CAREER DEVELOPMENT (CACD)

The Center for Academic and Career Development (CACD) is a coordinated guidance, counseling, referral, and consultative program within Duquesne University. The Center provides for both direct counseling and guidance services to students, assisting them through the educational process and the career development process. Through the Center a student can seek any or all of the following services: academic planning, tutoring, academic skill development, vocational guidance, career planning, career information, job placement assistance, academic skill assessment, career assessment and personality assessment. Also, students can receive indirect assistance through referral to appropriate University and community programs. The Center can further assist all University departments and divisions as a source for their student referrals also as a consultative service for occupational, community and University surveys of academic and career needs.

CAREER PLANNING AND PLACEMENT. Students and graduates of Duquesne University have available to them the full services and programs of Career Planning and Placement. The person whose vocational goals have not been formulated or are changing may seek career planning through personal

contact with the professional staff and by using the career resources and collection. Early use of this service is encouraged.

The individual with well-defined career goals may seek employment advice including resume preparation, job application and interview techniques, job referrals, and credentials. The graduating student may also be interested in campus interviews with visiting employers.

Any student group or academic department may contact Career Planning and Placement for aid in developing a career program and/or in securing a career speaker.

The part-time and summer employment program is important to students in financing their education and to those seeking practical experience to augment college training. Placement in campus jobs is largely, though not totally, dependent upon financial need. Part-time and summer jobs in the community are also available, with new listings arriving daily.

Students and alumni are invited to call (434-6644), or visit (305 Administration Building), Career Planning and Placement. Hours are 8:30 A.M. — 6:00 P.M., Monday and Thursday, and 8:30 A.M. — 5:00 P.M., Tuesday, Wednesday and Friday.

LEARNING SKILL PROGRAM. The Learning Skills Program, located on the third floor of the Administration Building, is an ancillary academic service, whose primary charge is the intellectual development of students. Services are provided in coordination with academic offices of the University.

As part of its academic assistance efforts, the Learning Skills Program delivers diagnostic and prescriptive services. Individualized developmental programs in reading, writing, mathematics, and science are offered students who seek to upgrade their academic skills and advance their intellectual growth.

A free tutorial service provides students with competent tutors in numerous subject areas. In addition, a comprehensive study skills program is available to help students prepare study skills as well as to assist students experiencing academic difficulties.

The program is free to all Duquesne University students. Appointments can be made by phoning 434-6661. Hours are 8:30 A.M. to 5:30 P.M., Monday through Friday.

TESTING BUREAU. The Testing Bureau provides counseling to students who have questions or concerns relating to some aspects of their personal and/or academic life. As the name implies, tests and inventories are incorporated whenever appropriate to aid in compiling as much information about students' abilities, interests, and personality as possible, insofar as these relate to their concerns. The test results are used in conjunction with extensive interviews in order to facilitate the resolution of problems by looking at alternatives and trying to formulate viable plans.

The Testing Bureau has assisted students to: make career choices, understand their abilities, interests and personality factors, look at alternative

careers, understand personal concerns, acquire referral information to University and neighborhood organizations, and acquire information concerning applications for national and other standardized tests (for example GRE, SAT, MAT, LSAT, CLEP, etc.)

The Testing Bureau is open, free of charge, to all Duquesne students, and is located in Room 308 of the Administration Building. Appointments may be made by telephone (434-6204). Hours are 8:30 A.M. – 4:30 P.M., Monday through Friday.

INTERNATIONAL STUDENT ADVISEMENT

The responsibility of the International Student Advisor is to be of service to all international students in the areas of adjustment, housing, and activities. Other services include the preparation of forms for extension of stay, assistance for obtaining summer employment where permissible by law, and upon graduation, the preparation of applications for practical training.

The International Student Advisor's office is part of the Office of the Dean of Students which is located in the Duquesne Union.

PSYCHOLOGICAL CENTER FOR TRAINING AND RESEARCH

The Psychological Center for Training and Research is staffed by the Psychology Department and is available to students for personal counseling. Counseling interviews provide the student with an opportunity for personal growth through the development of his ability to find his own solutions for difficulties of a personal nature. Single conferences or a series of interviews in individual or group counseling can be arranged at the Center's Office, which is located on the third floor of the Guidance Building. Hours are 9:00 A.M. to 5:00 P.M., Monday through Friday.

RESIDENCE LIFE

Residence Life is dedicated to the task of creating an environment in which a student can grow and develop as a total person. Its program is based on two assumptions: 1) the student's residence hall living experience can be an important part of the total university education; and 2) the residence hall staff with a defined educational mission can greatly enhance the opportunities for students to profit from their residence hall experience. Therefore, it is the purpose of Residence Life to facilitate the personal and academic growth of student living by striving to make the whole of residence life an educational experience. To this end, the professional and resident assistant staff will provide the wherewithal to facilitate such development.

Recognizing that each individual has unique talents and potentials, every effort is made to create a residence hall environment that is acceptable to each individual and open to his or her effort on this environment. It is the student who, actively becoming part of environment, enriches his or her own development. It is this aim that university living strives to accomplish.

In the belief that residence living adds to the educational opportunities of the individual student, the University reserves the right to require all under-

graduate students who do not commute from their permanent home of residence to reside in University residence halls. Availability of space currently limits implementation of this requirement to freshmen and sophomore students.

The parking situation is critical, largely because of the University's urban setting; therefore, resident students are discouraged from bringing automobiles to the campus unless absolutely necessary. Only a limited number of parking permits is available for resident students.

HEALTH SERVICES

The Health Services Office is located on the Second Floor of the Duquesne Towers Residence Hall. Registered nurses are available on a regular schedule throughout the year. Clinic hours are conducted daily during the academic year at specific hours, Monday through Friday, by the University physicians.

Primary health care is provided for resident students as a part of their room and board contract. Commuter students may receive the same service by payment of a nominal fee each semester. Further information may be obtained at the Health Services office.

Emergency service is also available to all commuter students, faculty members, and staff members. A completely equipped ambulance is maintained by the University for emergency use. Should an emergency occur when the Health Services office is closed, the Department of Public Safety should be contacted immediately.

Health Service costs are included in room fees for resident students and by payment of the previously mentioned special fee for non-residents; however, all additional treatment by non-University physicians, clinics, or hospitals must be paid for by the student.

HEALTH INSURANCE

It is recommended that each student carry some form of health insurance. The University provides a Student Health Care Program which has been designed to meet the needs of the student, and is priced lower than individual health insurance policies. Complete information about this insurance plan may be obtained from the University Insurance Officer, Second Floor of the Administration Building. *Note: The University is not responsible for medical expenses resulting from participation in intramural sports.*

ACTIVITIES AND FACILITIES

ATHLETICS

Duquesne University is a member of the National Collegiate Athletic Association, the Eastern Collegiate Athletic Conference, the Association for Inter-Collegiate Athletics for Women and the Eastern Association for Inter-Collegiate Athletics for Women. The University follows the rules of these organizations in determining a student's eligibility for a varsity team. The

Athletic Department supports the following varsity teams: baseball, basketball, cross-country, golf, rifle, tennis, women's basketball, and women's volleyball. The golf, rifle, tennis, and bowling teams are open to both men and women athletes.

Prospective candidates for any of the teams may obtain applications from the Athletic Office in the Main Gymnasium. Those interested in applying for either of the women's teams may contact the Assistant to the Director of Athletics in University Hall. Duquesne's women's varsity basketball and volleyball teams compete with women's teams from other colleges and universities in the tri-state area. The bowling team competes in the Club League of Western Pennsylvania. Candidates for all teams may apply for athletic grants-in-aid.

Football is an inter-collegiate sport funded under the Athletic Department budget, operating within Club Football Association rules. Those interested in participating in football should contact the Director of Athletics. No athletic grants-in-aid are offered for this sport.

DUQUESNE UNION

The Union is more than a unique building. It is an organization, a program, a service, and a spirit that has spread through Duquesne since it opened in March 1967. Through cooperative governance and management of its human and physical resources, the Union strives to stimulate individual self-development through interaction with diverse people and ideas. With a goal of community, all aspects of the Union—facilities, programs, and committees—are open to all segments of the campus—students, faculty, administrators, and staff.

PROGRAM BOARD

Student committees of the Union Program Board cooperatively organize a variety of programs each year. Funded by a portion of the University Fee, the Program Board coordinates and balances general campus programming under the supervision of the Union Governing Council.

The Union constitution permits considerable flexibility in its program committee structure; committees may be added or deleted according to student interest. This allows for new ideas to grow and become an active part of University activities.

Membership on Union Program Board committees is open to all students, challenging them to meet and share their talents in ways which promote individual growth and group effectiveness.

TAMBURITZANS

The Duquesne University Tamburitans were founded in 1937 at the University and were the first university-based performing folk ensemble in the United States. The group takes its name from the Tamburitza family of stringed instruments, indigenous to the folk cultures of Southeastern Europe.

The group exists for the dual purpose of preserving and perpetuating the Eastern European cultural heritage in the United States and offering scholarship opportunities to deserving students.

THEATRE

The Red Masquers serves to provide an extracurricular outlet for students who wish to participate in the theatre. Its aim is to provide the University and its students with educational and cultural benefits that accrue from a dramatic program. In line with these objectives, the Masquer's program offers a variety of stage entertainment—one-act plays, musicals, comedies, tragedies. Any Duquesne student is eligible for membership.

WDUQ RADIO AND TELEVISION

The University's radio station (WDUQ—90.5 F.M.) and television (closed circuit) provide academic support to the individual schools and departments through seminars, workshops, laboratory experience, and extracurricular opportunities in communication skills for individuals and groups. Most positions on the staff are filled by students. The University radio station operates on a 25,000 Watt frequency over a radius of seventy miles.

SYSTEMS CENTER

The Systems Center is a service department operated by the School of Business and Administration. Its main function is to make available to the students and faculty of the University the use of a modern computing system. Through the curriculum offered by the School of Business and Administration, the student is made cognizant of the potential uses for this new and powerful tool. Instruction in basic programming is provided to the students to aid them in fulfilling their class assignments. Individual research projects by the students and faculty are encouraged.

An auxiliary function of the Systems Center is to provide data-processing services for the administrative offices of the University. Two of the services being provided are automated registration and grade reporting. Students who work in the Systems Center become involved with the problems of setting up and operating the data processing system.

The Systems Center Staff is responsible for programming and operating specialized programs such as the Duquesne University Management Game which is an important part of both the undergraduate and graduate curriculum.

STUDENT GOVERNMENT

STUDENT GOVERNMENT ASSOCIATION

The Student Government Association is a student-created structure designed to provide a forum for the expression of student views and interests, to maintain academic freedom and responsibility as well as student rights, and to

foster intelligent interest and participation in all phases of University life. A major function of the SGA is to serve as student representatives on important University committees, including the Administrative Council (advisory to the President) and the Council of Academic Deans (the highest academic board).

RESIDENCE COUNCIL

The Residence Council coordinates activities, enforces regulations within the residence halls, and promotes interest in campus affairs.

It is the aim of the Residence Council to serve as a link between the resident students and the administration. Aside from the council activities, representatives of the Residence Council serve on the Council on Student Services and the Food Service Committee to provide student input for the formulation and review of University policies affecting residence life.

INTER-FRATERNITY COUNCIL

The Inter-Fraternity Council serves as a clearing house for general fraternity social information and as a forum for airing constructive proposals for the improvement of the fraternity system. Membership in the Council is composed of three elected or appointed representatives from each of the 10 member fraternities. The IFC establishes all rules governing inter-fraternity sports and regulates pledging.

PAN-HELLENIC COUNCIL

The Pan-Hellenic Council was established for the purpose of strengthening women's fraternities as organizations and for promoting cooperation among the groups through scholastic, athletic, and social activities. Membership in the Pan-Hellenic Council is composed of the presidents and elected representatives of each of the six women's social fraternities. Pan-Hellenic Council establishes all rules concerning the rushing and pledging of new fraternity members.

STUDENT ORGANIZATIONS

There are more than 100 active student organizations at Duquesne. Some serve the needs of such specific groups as minority students, veterans, residents, and commuters. Others relate directly to major areas of study. Some honor academic achievement. Many are formed to meet religious, service or social needs and interests. Whatever their purpose, these organizations and their activities comprise a major part of campus life.

HONOR SOCIETIES

These societies have as their primary purpose recognition of scholarship achievement and academic excellence and are members of the Association of College Honor Societies.

PROFESSIONAL AND DEPARTMENTAL ORGANIZATIONS

These professional organizations exist to provide the fertile ground for the

growth of informal exchange of ideas pertinent to the student's academic pursuits. With this purpose in mind, these organizations sponsor numerous programs including debates, symposiums, and lectures.

SERVICE ORGANIZATIONS

The purpose of these nationally-affiliated organizations is to provide a high standard of service to the campus and local communities while, at the same time, developing the leadership qualities of and cooperation among each member of the organization. With this purpose in mind, service organizations sponsor a wide variety of professional, service, charitable, and social programs.

SOCIAL ORGANIZATIONS

Social organizations are composed of college men and women who have joined together to enhance their identities by sponsoring and promoting social, athletic, cultural, and academic events. Many of these organizations belong to Inter-Fraternity Council or Pan-Hellenic Council.

PUBLICATIONS

The Duquesne Duke, The University campus newspaper, is written and edited by the students for the students. It appears every Thursday during the academic year except during examination periods and holidays, and provides an array of campus news, student opinions, editorials and advertisements. The paper is geared to all members of the University; administrators, faculty members, employees, and most of all students. Membership in the Duquesne Duke is open to all students.

The Duquesne Magazine is a literary publication, published each semester, which affords students the opportunity to submit writing, artwork, and photographs.

L'Espir du Duc, the yearbook, highlights the events of the previous year to remind all graduates of their alma mater. It is mailed to all seniors after their graduation.

STUDENT HANDBOOK

A Student Handbook that contains detailed information about practices and procedures of University policies that concern students is available to all new enrollees. It may be obtained from the Information Office in the Duquesne Union or from the enrollee's academic advisor.

Part IV: Admission, Tuition and Fees, Financial Aid





Admission

OFFICE OF ADMISSIONS

The Office of Admissions is located on the first floor of the Administration Building.

Telephone: (412) 434-6220, 434-6221, 434-6222

Office hours: Monday through Friday from 8:30 A.M. to 4:30 P.M. and on Saturday from 9:00 A.M. to 12:00 Noon.

POLICY

It is the policy of Duquesne University to admit applicants who are best qualified to profit from opportunities which the University offers for intellectual, spiritual, and social growth. In general, admission is based upon past academic performance, scholastic ability, and personal characteristics. Information about religious preference, sex, racial characteristics, and ethnic origin is not taken into consideration by the Committee on Admissions.

ADMISSION REQUIREMENTS

1. A candidate must have been graduated from an approved secondary school in the upper three-fifths of the class, and must have demonstrated exemplary personal conduct in that institution. Applicants who have not completed four years of high school must submit a High School Equivalent Diploma issued by their state department of education.

2. High school curriculum must include 16 units distributed as follows: four units in English; eight units in any combination from the areas of social studies, language, mathematics, and science; and four elective units for which the secondary school offers credit toward graduation. In specific instances, and at the discretion of the Committee on Admissions, the genuine equivalent of these requirements may be accepted in lieu of the precise requirements specified. (Note: Candidates planning to enroll in Pharmacy, Pre-Dental, or Pre-Medical programs, Medical Technology, Radiological Health, or as science or mathematics majors should have completed a minimum of seven units in mathematics and sciences.)

3. Scores in accordance with the standards adhered to by the University must be presented for the required College Entrance Examination Board Scholastic Aptitude Test (SAT) or The American College Testing Program (ACT). (Note: For admission to the School of Music, an audition is required.)

ROLLING ADMISSION

According to the Rolling Admission Plan, as soon as an applicant's credentials are received, they are evaluated and notification of the decision of the Com-

mittee is sent to the applicant. Duquesne University subscribes to this plan. Generally, a student will be notified upon receipt of senior SAT or ACT scores and the first marking period grades for the senior year.

APPLICATION—NEW FIRST-YEAR STUDENTS

Application should be addressed to the Director of Admissions, Duquesne University, Pittsburgh, Pennsylvania 15219. It may be submitted at any time during the candidates' senior year up to July 1, with admittance to Duquesne University to be initiated in November of the candidate's senior year.

The application procedure is as follows:

1. Obtain, complete, and file the Application for Admission with the Office of Admissions.
2. Include the \$20 non-refundable application fee with the application form. No application will be processed for consideration by the Committee on Admissions unless accompanied by the required fee.
3. Request the secondary school principal or guidance counselor to submit a transcript of the candidate's academic record.
4. Complete the required SAT or ACT examination during the spring of junior year or fall of senior year. It is the personal responsibility of each candidate to have test scores forwarded to the University.
5. An interview is highly recommended for prospective students.
6. If accepted, submit non-refundable tuition deposit by May 1 of senior year.

It is the responsibility of the applicant to arrange to have all supporting credentials on file with the Office of Admissions and Financial Aid Office prior to the deadline dates.

EARLY ADMISSION

Although the University believes that most students profit from four years in the secondary school, the Early Admission Plan is open to outstanding students. This is a plan whereby unusually able and mature candidates who have completed less than four years of a secondary school program may apply for consideration to begin college after their junior year. The high school diploma is awarded following successful completion of their freshman year in college. Two separate interviews are required. Further details may be obtained by telephoning or writing to the Admissions Office.

APPLICATION—OTHER CATEGORIES

It is the responsibility of persons who apply for evening study, or as foreign students, post-graduates, readmission students, transfers, temporary transfers, and veterans, or for the Summer Session from Duquesne or as temporary transfers from other institutions to arrange to have all supporting credentials

on file with the Office of Admissions and the Financial Aid Office before deadline dates.

INTERNATIONAL STUDENTS

Foreign students are expected to meet the requirements for admission from secondary schools or from other colleges and universities as outlined below. In every instance, Duquesne must receive complete and official transcripts of all degrees, diplomas, marks sheets, and examination records six months prior to the student's expected date of entrance. Records should be in original or notarized photostatic copies, accompanied by certified English translations.

1. *Academic:* The student must rank in the upper half of his secondary school graduating class and must present satisfactory scores from the SAT (Scholastic Aptitude Test).
2. *English Proficiency:* Students coming directly from foreign countries are required to take the TOEFL (Test of English as a Foreign Language)* in their country before a decision may be made on their admission to the University. Proficiency in English must be demonstrated in listening and reading comprehension and writing ability. Students who reside in this country at the time of application may be requested to take the TOEFL at the discretion of the Admissions Office.
3. *Financial Statement:* They must present documented evidence that they have in their possession adequate funds for study at Duquesne. The University does not have a program of undergraduate scholarship assistance for foreign students.
4. *Health Certificate:* Students for undergraduate admission must present evidence of good health in the form of a health certificate signed by a physician.

Upon completion of all academic and non-academic requirements, the Foreign Student Advisor will issue the necessary documents for obtaining a student visa to the United States. To complete on-campus registration, foreign students who are admitted should plan to arrive one week before the term begins.

POST-GRADUATES

A Post-graduate student must submit a Post-graduate application if the Bachelor's degree was received from an institution other than Duquesne. If the bachelor's degree was received from Duquesne an application for re-admission must be submitted. In both instances, proof of degree is required either by an official transcript or a certificate of graduation.

*For information about testing in any country, the Educational Testing Service, Princeton, New Jersey 08540, should be contacted.

READMISSION

Any student who withdraws from the University must apply for readmission through the Office of Admissions regardless of the time interval involved since withdrawal. A student who is dismissed for academic reasons must appeal to the Committee on Student Standing of the school to which application for admission or readmission is being made.

TRANSFERS

A student who wishes to transfer from another college or university must have the complete transcripts of high school and college records forwarded to the Office of Admissions and must submit an application for admission. When accepted, the student must supply to the dean of his school a description of the courses which appear on the transcript. The student should contact the Advisement Office of his school for placement and curriculum planning following a reasonable period for evaluation of transcript.

The College of Liberal Arts and Sciences and Schools of Education and Pharmacy award 60 semester hours of credit to accepted transfer applicants who have an Associate Degree in Arts from a regionally accredited two-year institution.

Students transferring from a regionally accredited institution must present academic records which show an overall average of a C (2.0 on a 4.0 quality point system).

Persons seeking admission to the University as transfer students from a state approved college which does not have regional accreditation must have attained a cumulative average of 3.0 based on a 4.0 quality point system. In addition, such prospective students must take the College Entrance Examination Board tests and attain the appropriate scores.

An interview is required of all transfer students.

TEMPORARY TRANSFERS

No Temporary Transfer Student will be granted admission without formal application and an official transcript.

No Temporary Transfer shall be permitted to register for more than two semesters without making arrangements to become a permanent transfer.

An interview is required of Temporary Transfer applicants before attendance for their third semester.

SUMMER SESSION

DUQUESNE STUDENTS

Any Duquesne University undergraduate student who was granted continuance at the close of the preceding Spring Semester is authorized to register in the Summer Session. Students who were dismissed by their school at the

close of the preceding Spring Semester for academic reasons may register for summer classes by permission of the Committee on Student Standing of their school. All students must have their course selections approved by their academic advisor.

Graduates and other former students, including any who withdrew from the University, must obtain readmittance before they may register for summer classes.

STUDENTS FROM OTHER INSTITUTIONS

A student of another college or university who wishes to enroll for the summer session, and who intends thereafter to return to the original institution and is eligible to continue there may be admitted to the Summer Session. A tear-out admissions application and registration form for summer study is provided in the announcement of summer offerings, which may be obtained from the Office of Admissions at mid-March.

ADVANCED PLACEMENT

Students who have followed the College Entrance Examination Board college level program in secondary schools and have performed satisfactorily in the advanced placement examinations are eligible for advanced placement. Duquesne University grants credit, as well as placement, for achievement that merits such consideration. Subjects included in the program are: English composition, history, history of art, modern foreign languages (French, German, Spanish), Latin, mathematics AB, mathematics BC, physics B and C, chemistry, biology.

Credit will be given on a minimum advanced placement score determined yearly by the College of Liberal Arts and Sciences. For current information about the minimal score acceptable for each subject and the credits granted, consult with the University's Director of Testing Bureau or the Office of Academic Advisement, College of Liberal Arts and Sciences.

Applicants who hope to receive advanced placement credits must request that scores be sent to the University. Information about equivalent University courses for which qualifying students may receive credit may be obtained from the University's Director of Testing Bureau or the Assistant Dean for Administration, College of Liberal Arts and Sciences.

COLLEGE LEVEL EXAMINATION PROGRAM

The specific examinations for which the College of Liberal Arts and Sciences will award credit, with acceptable scores, are:

1. *General Examinations:* Humanities, social sciences.
2. *Subject Examinations:* American government, American history, analysis and interpretation of literature, biology, college algebra, college algebra-trigonometry, college composition, general chemistry, general psychology, introductory calculus, introductory sociology, microbi-

ology, macro-economics, micro-economics, statistics, western civilization.

A student who has accumulated 30 or more credits is not eligible to take the General Examinations for credit. A student who has completed 60 credits in a degree program is not eligible for any CLEP credit but may utilize the "challenge" procedure under the Credit by Examination policy described on page 207. The University is continuing to evaluate CLEP subject scores and performance at Duquesne. Credit will be given on a minimum score determined yearly by the College of Liberal Arts and Sciences.

Information about the time and place that examinations are given may be obtained from the University Testing Bureau or the College Level Examination Program, Box 977, Princeton, New Jersey 08540. Information about equivalent University courses for which qualifying students may receive credit may be obtained from the University's Director of Testing Bureau or the Assistant Dean for Administration, College of Liberal Arts and Sciences.

CREDIT HOUR BANK

The Credit Hour Bank is designed for high school students and adults who would like to sample college courses prior to official enrollment. The maximum number of credits that may be taken is 15. Credits completed in the Credit Hour Bank are held in escrow until the applicant applies and fulfills all regular admission requirements. Upon regular admittance, all credits are then evaluated toward a degree program.

To apply to the Credit Hour Bank Program, write Credit Hour Bank across the top of an application, submit the \$20 non-refundable application fee, and attach a letter indicating full comprehension and acceptance of the conditions of the Credit Hour Bank Program.

Generally, all first year courses in the College of Liberal Arts and Sciences are open to Credit Hour Bank students.

Tuition and Fees

The University reserves the right to modify these charges if exigencies require such action. All charges are for one semester only; for yearly total, double amounts where applicable.

Application Fee (non-refundable)	\$ 20
Matriculation Deposit (non-refundable)	\$100
Residence Hall Pre-Payment (non-refundable)	\$100
Residence Hall Damage Deposit	\$ 50

SEMESTER TUITION AND FEE CHARGES

Auditors pay the same as those taking credit. The University reserves the right to change the tuition and fee charges herein at any time.

Undergraduate Tuition	for each semester hour credit	\$ 93
Graduate Tuition	for each semester hour credit	\$ 98
*University Fee	12 or more credits	\$150
	9 to 11 credits	\$106
	5 to 8 credits	\$ 75
	1 to 4 credits	\$ 40

*Undergraduate Music Student Fee when carrying

12 or more credits	\$100
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*Undergraduate Business and Administration Student Fee

12 or more credits	\$ 5
less than 12 credits	\$ 3

*Undergraduate Pharmacy Student Activities Fee

(Third, Fourth, and Fifth Year Students)

Late Registration	\$ 10
Removal of I Grade Fee	\$ 5
Change of Schedule Fee for processing each form	\$ 5
Credit by Examination for each course credit hour	\$ 10

LABORATORY FEES

All amounts are for one semester; where applicable, the yearly charge is double. In addition to the laboratory fee, there is a breakage charge of \$5.00 a semester; this is proportionately refundable, depending upon the losses incurred.

Biology (each laboratory)	\$ 25
Chemistry (each laboratory)	\$ 25
Earth Science 103, 104	\$ 15
English 380, 381, 382, 383	\$ 5
Journalism 267, 268, 367, 369, 405, 409	\$ 10

*Charged on each semester registration.

Journalism 370, 378, 413	\$ 15
Pharmacy (each laboratory)	\$ 40
Physics (each laboratory)	\$ 15
Psychology 356	\$ 7
ROTC Professional Laboratories	\$ 5
Speech 101,, 203	\$ 5

SUMMER AND SPECIAL SESSION TUITION AND FEE CHARGES

Undergraduate Tuition	for each semester hour credit	\$ 93
Graduate Tuition	for each semester hour credit	\$ 98
University Fee	1 to 4 credits	\$ 40
	5 to 8 credits	\$ 75
	9 to 11 credits	\$106
	12 or more credits	\$150

GRADUATION FEES

Bachelor Degree	\$ 30
Master Degree	\$ 40
Doctor of Pharmacy Degree	\$ 40
Juris Doctor Degree	\$ 40
Doctor of Philosophy Degree	\$ 55
Thesis Binding Fee—Doctoral Dissertation	\$ 40
Thesis Binding Fee Master Thesis	\$ 25

WITHDRAWAL AND TERMINATION OF ATTENDANCE

Upon officially withdrawing from the University, a student receives remission of part of the tuition charged for the semester or session in accordance with the Tuition Remission Schedule. The amount of the remission is added to payments, and a cash refund is made where a credit balance is created on the student's total account.

The Effective Date of Withdrawal for determining the percent of remission is that on which the appropriate Academic Dean was notified by letter of the student's decision to terminate attendance and requested official withdrawal. It is also the recorded date of the student's separation from the University and regarded as the last day of attendance. A student is considered enrolled and "in attendance" until he or she acts to terminate attendance in conformity with this policy even though absences from classes were observed and recorded before the Effective Date of Withdrawal.

Any remission of tuition beyond the limits of the prescribed withdrawal schedule is subject to approval of the University Vice President and Treasurer. However, when a student's attendance is involuntarily terminated because of personal disability arising from injury or illness, the appropriate Academic Dean may establish the last day of attendance as the Effective Date of Withdrawal.

TUITION REMISSION SCHEDULE

This schedule applies to tuition only; it does not apply to other charges, such as the University Fee, course fee, and laboratory fees, nor to the reduction of credits resulting from course withdrawals made after the Change of Schedule period:

<i>Within the Semester</i>	<i>Percent of Remission</i>
First Week	80
Second Week	80
Third Week	40
Fourth Week	20
After Fourth Week	None
<i>Within the Summer Session</i>	
First Week	60
Second Week	20
After Second Week	None

ROOM AND BOARD

The request for on-campus residence is made on the same form used for application for admission to the University. After the student has completed the admission procedure and has paid the matriculation deposit, the residency request is referred automatically to the Director of Residence Life. The request is processed and necessary application forms are forwarded to the student.

The University requires that a prepayment of \$100, which is applicable to the following semester's room and board account, accompany all applications for room reservations or renewals. This pre-payment is non-refundable.

In addition, a \$50 damage deposit must accompany each initial housing contract. This deposit is retained by the University throughout the period of residency. If no damage deductions are incurred and the room key and ID card returned, the full amount of the deposit is refunded at the final termination of residency.

Reservations are made on a semester basis—August to December, January to May. Rooms may be occupied no earlier than noon of the day preceding the beginning of the orientation or registration periods.

All students occupying rooms in the University residence halls are required to take their meals at the Resident Dining Hall. Charges are for 20 meals a week, with meals served commencing with the evening meal of the day before the first day of classes.

All resident students must present evidence of health and accident insurance coverage; such coverage is available through the University.

The University reserves the right to modify these charges if exigencies require such action.

Regular Session—Room and Board (20 meals a week)

Single for each semester	\$957.50
Double for each semester	\$752.50

Summer Sessions—Room and Board***Eight Weeks:**

Single	\$510.00
Double	\$402.00

Six Weeks:

Single	\$383.00
Double	\$301.00

Workshops (a week)

Single	\$ 64.00
Double	\$ 50.00

ROOM AND BOARD REFUND

No refund of room charges will be made where withdrawal occurs after the opening of class.

In the event of withdrawal, board will be refunded at the rate of 75 percent of the balance left on the student's meal plan up until mid-semester. After the mid-semester point, no refund will be made.

PAYMENTS AND OTHER CREDITS**DEFERRED PAYMENT**

All charges for tuition, fees, room, and board, less financial assistance authorized by the Financial Aid Office, are payable at registration.

STUDENT FINANCING PROGRAM

The University provides a deferred plan for the payment of tuition and fees; to qualify for the plan all charges for previous semesters must be paid in full. The program provides financing up to 50 percent of the total current semester charges, less financial aid and other prepayments, to be repaid in two equal installments with interest on the unpaid balance of 15 percent a year.

A late charge of \$10 a month plus interest at the rate of 15 percent a year will be assessed for any amount which is not paid when due.

*Those desiring residency for the Summer Session should make reservations with the Assistant Dean of Students and Director of Residence Life no later than May 31. A deposit of \$20 must accompany each application. After occupancy, the deposit is applied toward the room and board expenses. This deposit is not refunded if the room is not occupied.

BANK CREDIT CARDS

BankAmericard and Master Charge are accepted for payment of tuition, fees, room and board.

CASHING CHECKS

A student may cash a check up to a maximum of \$50 at the Cashier's Office between 9:00 A.M. and 4:00 P.M., Monday through Friday, except during registration, with a validated ID Card.

BAD CHECKS

It is the policy of the University to charge bad checks to the student who cashes them regardless of the maker. A \$3.00 service charge will be assessed on checks that are returned from a bank for lack of funds. In addition, monthly bills will reflect a \$10 penalty plus 15 percent a year on the balance due.

SCHOLARSHIPS

A student may have a scholarship to credit towards his or her tuition and fees. This scholarship will only be honored by the cashier when it is presented on a Scholarship Voucher prepared by the Scholarship and Financial Assistance Office.

Financial Aid

Duquesne University subscribes to the philosophy that “no student should be denied the education of his choice for lack of sufficient financial resources.” The Office of Student Financial Aid has been established to help students locate the financial support they require. Students and parents should not be overwhelmed by the variety and apparent complexities of modern student financial aid. Rather, a patient and thorough examination of aid opportunities should be undertaken to locate the most advantageous forms of assistance available to the individual student.

PRINCIPLES OF AID

FINANCIAL NEED

The major criterion of most aid programs is the student's need for funds. Parents and the student are expected to pay the expenses of education. However, to the extent they cannot reasonably be expected to meet this expense, there is a *demonstrated financial need* or eligibility for aid. Methods of determining need may vary slightly among aid sources, but all have the common objective of identifying the difference between educational costs and the individual family's ability to contribute to these costs. The costs considered include tuition, fees, room and board or an allowance for maintenance at home, travel or commuting expenses, books, and necessary personal expenditures. Need analysis presumes the family's ability to contribute to these costs will approximate that of families of similar size and financial strength, with consideration given for individual circumstances. Where need is a factor, it is extremely important that all financial information reported by the family be *complete, accurate, and updated* for any major changes. Such information is considered and treated confidentially by aid administrators.

AWARD CONDITIONS

All financial aid awards are subject to terms and conditions set forth in applications and award notifications. It is important that the student carefully read all information provided by aid sources and promptly notify them of changes pertinent to their applications or awards.

STUDENT SELF-HELP

As the beneficiary of higher education, the student is expected to accept at least partial financial responsibility for the cost. This principle is reflected in both the determination of need and the types of aid available. In determining need, consideration is given for at least a minimum contribution to cost from the student's summer earnings, savings, and benefits such as Social Security. Two types of self-help programs of aid are available: loans and work. Student loans provide rates, terms, and conditions far superior to those offered by commercial lenders, and offer the student the opportunity to help himself by

accepting future repayment responsibility. Student employment programs provide the opportunity to help earn a portion of the educational costs.

GIFT ASSISTANCE

Non-repayable scholarships or grants are available in accordance with one or a combination of the following criteria: 1) *Financial Need*; 2) *Superior Academic Potential or Achievement*; 3) *Economic Opportunity*, which aims to provide economic parity for the student with very limited family resources, and whose need is therefore exceptional; and 4) *Service Recognition*, which reflects proficiency in a specialized field such as music, or for future service such as an officer in the Armed Forces. It should be noted that many sources of gift aid expect the student to accept some form of self-help assistance.

MEETING STUDENT NEED

The Financial Aid Office *attempts* to provide aid equal to need for all student applicants. Frequently, this requires an "aid package" consisting of funds from multiple aid sources and programs. Those programs which are under the direct control of the Aid Office are not usually sufficient to meet full need or provide an aid package of the most beneficial composition. It is advisable and expected that students who apply for assistance to the University will also apply to federal, state, and other available sources.

PROGRAM FUNDING

All programs of financial aid are subject to limitations of available funds. Therefore, in addition to the eligibility requirements of a particular program, assistance depends upon the level of funding in the program. First consideration always goes to applicants who apply within deadline dates and who provide *complete and accurate* information. All programs are subject to change, elimination, or replacement. Changes in government programs are routine, since these require periodic legislative review.

CURRENT INFORMATION

Because programs of aid and conditions of eligibility do change from time to time, the student should attempt to keep abreast of new developments. The high school guidance office, the University Financial Aid Office, and the office of education in the student's home state are excellent sources of information. Students should avoid the error of disqualifying themselves for specific forms of aid because of hearsay or dated information. A decision not to apply to a particular aid source should be made only upon the advice of an aid officer.

SOURCES OF AID

ONE: FINANCIAL AID OFFICE

APPLICATION—UNIVERSITY AID

1. Applicants must be currently enrolled in the University or be in the process of applying for admission. Incoming students should not wait for official acceptance to the University before applying for financial assistance.
2. Obtain the formal application for financial assistance. (Freshmen and transfer students may obtain the form through Admissions Office publications or through the Financial Aid Office. Currently enrolled students may obtain the form only through the Financial Aid Office.) Complete this application and submit it to the Financial Aid Office, Duquesne University, Pittsburgh, Pennsylvania 15219 *PRIOR* to these deadline dates: For the Fall Semester or the academic year, no later than May 1; for the Spring Semester, no later than December 1. Late applicants will be considered on the basis of available funds.
3. Obtain from the high school guidance office or the Financial Aid Office a College Scholarship Service-Financial Statement. Complete and submit it according to instructions to the College Scholarship Service. Statements take four to eight weeks to process and therefore should be submitted as early as possible.
4. A reply to this application, if filed by deadline dates, should be anticipated as follows: Freshmen and new transfers: 60 days after CSS filing date, between mid-February and late March (providing student has been accepted for admission). Upperclassmen and graduate students: Replies should be anticipated in June or July.
5. Applications must be renewed annually.

AID PROGRAMS

The following programs for which the foregoing application procedures apply, are administered directly by the Financial Aid Office.

University Scholars Awards. The University awards approximately 15 scholarships annually to exceptional high school scholars. These awards are not based on a demonstrated need and may be renewed each year provided the student maintains a high level of academic achievement. Renewal amounts may vary relative to the degree of achievement.

Competitive Scholarships. These awards are given to students of outstanding ability and achievement who also demonstrate financial need. They are renewable yearly based on continued academic achievement, and continued demonstrated need. Continued academic achievement is normally reflected by a cumulative Quality Point Average of 3.0 or above. Renewal amounts may vary relative to the degree of achievement and level of need.

National Direct Student Loans. National Direct Loans are available to both full-time and half-time students who demonstrate financial need and are making acceptable progress toward a degree. Recipients are selected in accordance with guidelines published by the U.S. Office of Education. Loan repayment does not begin until nine months after the borrower terminates at least half-time study, and is scheduled over a ten year period at a three percent interest rate.

Nurses Training Act Loans. Nurses Training Act Loans are available to both full-time and half-time nursing undergraduate students who demonstrate financial need and are making acceptable progress toward a degree. Recipients are selected in accordance with guidelines published by the Federal government. Loan repayment does not begin until nine months after the borrower terminates at least half-time study in nursing, and is scheduled over a ten-year period at a three percent interest rate.

Health Professions Loans. Health Profession Student Loans are available to full-time undergraduate students in the Bachelor of Science in Pharmacy program who demonstrate financial need and are making acceptable progress toward a degree. Recipients are selected in accordance with guidelines published by the Federal government. Loan repayment does not begin until one year after the student ceases to pursue a full-time course of study in pharmacy.

Supplemental Educational Opportunity Grants. Federal grant assistance is available to full or half-time undergraduate students with *exceptional financial need*. Recipients are selected in accordance with guidelines published by the U.S. Office of Education.

Nursing Scholarships. Scholarship assistance is available to full or half-time undergraduate nursing students with *exceptional financial need*. Recipients are selected in accordance with guidelines published by the Federal government.

Health Profession Scholarships. Scholarship assistance is available to full-time undergraduate students with *exceptional financial need* who are enrolled in the Bachelor of Science in Pharmacy curriculum. Recipients are selected in accordance with guidelines published by the Federal government.

Repayment of Educational Indebtedness. Upon completion of professional training, nurses may enter an agreement with the Secretary of Health Education and Welfare to practice the profession of nursing in an area determined to have a shortage of nurses. Minimum agreement is for two years, with a third year optional. In return for such service, the Federal government will repay 60 percent of all bona fide educational indebtedness. For three year service, 85 percent of indebtedness will be repaid.

Student Employment. Two programs of employment are available to financial aid applicants who demonstrate need. The first is the College Work-Study

Program which is financed principally by Federal appropriations and awarded as aid in accordance with guidelines published by the U.S. Office of Education. The second program is referred to as the General Program which is funded by the University. In addition to considerations of financial aid, placement in a part-time position depends upon the student's qualifications for performing successfully in the job. Student employment is limited to a maximum of fifteen working hours a week when classes are in session. Students working under either program may not retain outside jobs during academic periods.

TWO: BASIC EDUCATIONAL OPPORTUNITY GRANTS

Direct grant assistance through the Federal government is available to undergraduates based on an eligibility determination reviewed and adjusted each year by Congress. Grants range from a minimum of approximately \$200 to a maximum of \$1800 to students determined to be eligible. Applications may be obtained from high school guidance offices, college aid offices, or branches of the United States Post Office. All undergraduate students are advised to apply for this form of aid. Students receiving aid through the University are *required* to apply for a Basic Grant.

THREE: STATE GRANT ASSISTANCE

General. Depending upon the student's legal state of residence, direct grant assistance from the state may be available for study at Duquesne University. Non-Pennsylvanians should contact their high school guidance counselor or state department of education to determine if grants are available, and to determine application procedures.

Pennsylvania State Grants. At current levels, grants ranging from \$100 to \$1200 a year are available to full-time undergraduate students, based on considerations of financial need. Applications may be obtained from high school guidance offices or from the Pennsylvania Higher Education Assistance Agency (PHEAA) in Harrisburg. Deadline is normally May 1.

FOUR: GUARANTY STUDENT LOANS

This program provides long-term, low interest student loans available through the cooperative efforts of Federal and state governments and participating private lending institutions. These loans are available to any student who is enrolled in an institution of higher learning on at least a half-time basis. They are provided by commercial lending institutions in every state. To apply, the student should inquire at a local lending institution where the student or parents have an account. The maximum the student may borrow in any academic year is \$2,500. The interest rate of seven percent a year will be automatically subsidized if the family's adjusted income is less than \$25,000. Additional information about subsidy may be obtained from the lender. Repayment of these loans begins nine months after graduation or withdrawal from school. A 90-day processing period should be anticipated. Guaranty Loans are generally considered an alternate or supplemental source of as-

sistance to all other forms of aid. Students who apply for or receive aid through the Financial Aid Office should apply for a Guaranty Loan only after consulting with an Aid Officer.

FIVE: OTHER SCHOLARSHIPS AND LOANS

In addition to mass programs of aid previously described, financial assistance may be obtained from a wide variety of sources. Since these tend to be *exclusive*, it is not possible to provide specific information. In general the student seeking potential sources of aid may inquire of: 1) high school guidance officers; 2) library publications such as: *Guide to Financial Aid for Students and Parents*, published by Simon & Schuster; 3) parents' employers or labor unions; 4) fraternal, social, religious, or professional organizations; 5) major organizations utilizing the skills of the field for which the student is preparing; and 6) specific departments within the University (listing follows).

AID FROM DEPARTMENTS AND SCHOOLS

COLLEGE OF LIBERAL ARTS AND SCIENCES

Carroll Scholarship in Creative Writing. Established in memory of Monsignor Walter T. Carroll and in tribute to Bishops Coleman F. and Howard J. Carroll, the purpose of this scholarship is to provide some deserving student, who has already demonstrated a talent in writing, with sufficient financial aid (the exact sum to be determined by the committee) so that in his senior year he may devote the time necessary to develop these talents. The award is administered by the Carroll Scholarship Committee of the English Department. Interested students should contact the committee before January 15 of their junior year.

Pittsburgh Communications Foundation Loans. The Foundation has established a \$3000 loan fund for deserving junior and senior full-time students in the Department of Journalism. Students will be required to repay the loan within two years after graduation at three percent a year. Such loans will be granted on the recommendation of the Chairman of the Journalism Department assisted by the Journalism faculty. Loan inquiries and applications should be made to the Chairman of the Department of Journalism.

The Eleanor Polis Capone Memorial Award. The award honors, in perpetuity, the memory of Eleanor P. Capone. The scholarship consists of the total annual income from a restricted growth endowment fund and is awarded to an undergraduate student enrolled at the University, who will be selected on the basis of merit in the field of creative writing, with need a secondary consideration. Interested students should contact the Chairman, Honors and Awards Committee, English Department, prior to January 15.

The Rev. Joseph A. Lauritis, C.S.Sp., Journalism Scholarship. This is an annual scholarship in tribute to the Rev. Joseph A. Lauritis, C.S.Sp., founder of the Department of Journalism and the University's radio station, WDUQ-FM, for an entering freshman at Duquesne University, planning to

major in journalism. The award is administered by the Lauritis Scholarship Committee of Journalism faculty, alumni, and friends.

Edward T. Leech Scholarship. This annual scholarship was established in 1971 by the Scripps Howard Foundation for journalism junior/senior students who demonstrate outstanding academic promise, concurrent financial need, and are preparing for a journalism career in the newspaper or broadcasting fields. It is administered by the faculty of the Department of Journalism.

SCHOOL OF BUSINESS AND ADMINISTRATION

Gulf Oil Corporation Honors Scholarships. This program provides grants of up to \$1500 a year to outstanding undergraduate students in the field which may eventually qualify them for employment in the business world and, more particularly, in petroleum and related industries. Normally, one scholarship is provided for each class, freshman through senior.

Law Enforcement Assistance Programs (LEEP). Programs of grants and loans for students of criminal justice are administered by the Law Enforcement Assistance Administration. Preference is given the student who is currently a law enforcement officer pursuing a degree in law administration.

SCHOOL OF EDUCATION

Helen S. Platt Memorial Scholarship. The Children's Aid Society of Jewish Women of Pittsburgh, Pennsylvania will award a financial scholarship for a student majoring in Special Education who is in need of financial aid. The student must also have sound academic credentials and a commitment to a career in Special Education.

Lawrence Roche Memorial Scholarship. The award will be made to a student who, as a junior in the School of Education, has in the judgment of the Awards Committee, demonstrated those qualities of scholarship, character, and professionalism which merit special recognition. The awardee must have a minimum quality point average of 3.0 at the time of application. The student must be officially registered as a senior in the School of Education of the University at the time of receiving the award. Applications must be submitted to the Dean's office no later than March 1.

SCHOOL OF MUSIC

Women's Advisory Board Scholarships. This fund provides scholarships in varying amounts each year to vocal performers. These scholarships are available to entering freshmen and upperclassmen.

George Barrere Memorial Scholarship. The Pittsburgh Flute Club offers a scholarship in flute in memory of George Barrere, founder of the first flute club in the United States. This \$300 scholarship is awarded to a freshman or a sophomore flute major.

Polish Arts League Scholarship. This award is made annually by the Polish Arts League of Pittsburgh to an outstanding performer in the School of Music. Preference will be given to a student of Polish ancestry. Other students will not be excluded from consideration.

Music School Scholarships. These awards are made possible by donations from individuals and organizations in appreciation of performances by School of Music students.

University Solo Wind Scholarships. These scholarships in varying amounts are awarded only to potential "First chair" performers.

University String Scholarships. These scholarships for tuition and applied music fees have been established by the University to promote the study of string instruments.

Pittsburgh Flute Club Award. This award is given to an outstanding woodwind student.

University Piano Scholarships. These scholarships are awarded to students showing outstanding talent in piano.

Ezio Pinza Memorial Scholarship. This award is presented to an outstanding vocal student, male or female, between the ages of 17 and 25 who has not completed an undergraduate degree.

SCHOOL OF NURSING

Professional Nurse Traineeship Program. The United States Public Health Service provides a limited number of traineeships for qualified registered nurse students who can complete the requirements for the baccalaureate degree within one year; who have been recently employed as nursing administrator, supervisor (including head nurse), or teacher; and who can qualify for admission to graduate study.

Other Programs. Two additional programs, Nurses Training Act Loans and Nursing Scholarships, are described under Sources of Aid—Financial Aid Office, page 193.

SCHOOL OF PHARMACY

American Foundation for Pharmaceutical Education. The Foundation annually allocates funds to accredited colleges of pharmacy. The college must provide a sum equal to that requested from the Foundation. Recipients, designated as Scholars of the American Foundation for Pharmaceutical Education, are selected from fourth and fifth year students.

Women of Galen. The Women's Auxiliary of the Galen Pharmaceutical Society of Pittsburgh annually provides scholarship funds to be awarded to deserving pharmacy students in their last years of attendance in the School of Pharmacy.

American Pharmaceutical Association Women's Auxiliary Loan Fund. This loan fund was established to support worthy women students in accredited colleges of pharmacy during the last two years of their attendance prior to graduation.

Beaver County Pharmaceutical Association Loan Fund. This revolving loan fund provides financial assistance to students in the School of Pharmacy who are residents of Beaver County, Pennsylvania. Applications are to be made to the Dean of the School of Pharmacy.

Samuel W. Curtis Loan Fund. This fund is intended to provide financial assistance for students in the School of Pharmacy.

Joel P. Laughlin Scholarship. In the honor of Joel P. Laughlin, a fraternity brother whose life was terminated early in his professional program, the Graduate Chapter of Phi Delta Chi annually awards three \$200 scholarships to one fraternity brother in each of the three professional years. The recipients must have demonstrated academic achievement and active participation in the function of the Fraternity.

Peter and Dorothy Manzione Memorial Fund. A revolving loan fund, donated by Rosetta and Geraldine Manzione and friends of the family, is available to all students in the School of Pharmacy.

Mary McPartland Beck Scholarship Award. Scholarship funds are available from earnings on a fund started by a bequest to the School of Pharmacy in 1970.

John W. Dargavel Foundation. Established by the National Association of Retail Druggists in honor of its executive secretary, John W. Dargavel, this foundation provides a \$200 scholarship to a qualified student in the School of Pharmacy as well as loans to students of pharmacy in their last three years for payment of tuition, fees, and books.

Galen Pharmaceutical Society Loan Fund. This revolving fund was established in 1963 for the purpose of providing financial assistance to worthy students of pharmacy during times of urgent financial distress.

Fred Schiller Loan Fund. This loan fund was founded by Mr. Fred Schiller, Pittsburgh pharmacist, in memory of the late Emanuel Spector, for worthy and qualified students in the School of Pharmacy. This revolving fund makes available tuition loans of varying amounts depending on the applicant's need and general ability.

John Clothier Sims Memorial Fund. This revolving fund, established in 1954, was made possible through the generosity of the friends of the late Mr. Sims, executive of Sun Drug Company, Pittsburgh. Partial tuition loans are made available to students under the conditions that apply to the Fred Schiller Loan Fund.

Pittsburgh Graduate Chapter of Kappa Psi Pharmaceutical Fraternity. Maintains a revolving loan fund for members of the undergraduate chapters. Details are available from the School of Pharmacy.

Rite-Aid Scholarship. A \$1,000 scholarship from the Rite-Aid Corporation is available to students entering the final year of the pharmacy program. Letters of application should be addressed to the Dean, School of Pharmacy, by May 1. Selection is based on financial need, demonstration of normal progress, and good standing in the pharmacy program.

Tau Alumni Chapter of Lambda Kappa Sigma. This professional pharmacy fraternity for women has established financial awards for members in their last three years of the pharmacy program. Awards are based on financial need and participation in the organization.

Dr. B. Olive Cole Graduate Educational Grant. A \$300 grant is offered by Lambda Kappa Sigma to financially assist an alumnae member who is enrolled in a program of graduate study and research in the pharmaceutical sciences. Applications must be received by the chairman of the grant committee by November 15. Applications are available in the School of Pharmacy Office.

Other Programs. Two additional programs, Health Professions Loans and Health Professions Scholarships, are described under Sources of Aid—Financial Aid Office, page 193.

RESERVE OFFICER TRAINING (ROTC) SCHOLARSHIPS

Army ROTC offers a number of scholarships for cadets enrolled in both the four-year and two-year programs. These scholarships provide for tuition, fees, required textbooks, and a \$100 a month subsistence allowance. Interested high school students who feel they can meet the competitive standards for the scholarships may apply by writing to: Army ROTC, Duquesne University, Pittsburgh, Pa. 15219. The application and processing period begins in June of the year in which the student completes his junior year of high school. For cadets already enrolled at Duquesne University, scholarships are available during the sophomore, junior, and senior years. In order to continue to be eligible to receive financial assistance, each scholarship recipient must maintain the academic and personal standards on which original eligibility was based. *Interested high school seniors must apply prior to December 31 of their senior year.*



Part V: Registration, Scholastic Policies





Registration

REGISTRATION

Students who attend the Fall Semester, which begins in late August, receive academic advisement and register for classes during the preceding months of April, May, June, and July. Spring Semester students register in the Fall Semester during November and early December.

Orientation programs for new students are conducted by the schools in late spring and summer in conjunction with academic advisement and registration.

A comprehensive invoice that confirms the class schedule of courses for which the student is registered and lists fees, tuition, dormitory charge, deposits, financial aid awards, and balance due is mailed to the student at his or her permanent address a month before classes begin, thus enabling the student or parent to make payment by mail.

A three-day final registration for students who have neither obtained registration for classes nor concluded financial arrangements is held just before the opening of classes.

The financial obligation for class places reserved by a registered student who does not subsequently attend cannot be canceled unless written notification of the decision not to attend is given to the dean of the student's school before the first class day. Notification received on or after the opening day of classes is subject to the official withdrawal policy.

OFFICIAL REGISTRATION

Only students who are recognized as *officially registered* are bona fide students of Duquesne University. Unless students are officially registered, they are not permitted to attend classes, engage in student affairs, or, generally, have access to the buildings and grounds or use of the University's facilities.

Official registration is the recognition given by the University to persons who have met these conditions:

1. Appropriate authority for admittance to study in a school or department has been given by an authorized officer of the University. The admitting authority for undergraduate students resides in the Director of Admissions.
2. Authorization to continue in the program selected has been given and registration for classes has been accomplished in compliance with all academic requirements and procedures.

3. Arrangements have been made to the satisfaction of the University for payment in full of all financial charges, including fees, tuition, and housing charges, all of which are due and payable in full before the beginning of classes.

CHANGE OF SCHEDULE

Students who require a change of their class schedules (dropping or adding a course) may make the adjustment during pre-registration or the change of schedule week at the start of a semester but not later than the Latest Date for Change of Schedule as announced in the Academic Calendar. All changes must be approved by the appropriate academic advisor and processed with the Registrar.

During the Change of Schedule week approval of the instructors whose classes are being added or dropped is also required. A fee of \$5.00 is charged for each form processed except when the change is by request of the appropriate Academic Dean.

No adjustment is made in the semester tuition charge for credits dropped when the change occurs later than the announced Latest Date for Change of Schedule. However, students who terminate their enrollment at the University *by officially withdrawing* are entitled to a reduction of the semester tuition charge according to the refund schedule published elsewhere in this catalog.

CROSS-REGISTRATION

Cross-college and -university registration provides opportunities for enriched educational programs, approved by a student's advisor or dean, for undergraduates at any of the following institutions:

Carlow College	La Roche College
Carnegie-Mellon University	Pittsburgh Theological Seminary
Chatham College	Point Park College
Community College of	Robert Morris College
Allegheny County	University of Pittsburgh

The opportunity for cross-registration will be available to each full-time student enrolled in any program leading to a bachelor's degree. Full credit and grade will be transferred.

Each college or university shall accept registration in freshman through senior level courses listed by them as open to cross-registration, selected from courses regularly accredited toward baccalaureate programs. First priority in registration shall go to the students of the host college.

The approval of the dean or advisor and registrar from each college or university must be obtained prior to registration. The student's advisor or dean is responsible for assuring eligibility for the course in which the student intends to enroll. Each qualified student may enroll in no more than one course off campus in any one term or semester under this program.

These policies on cross-registration are not effective at this time for enrollments in summer sessions, including the spring term at the University of Pittsburgh.

LATE REGISTRATION

With approval of the appropriate dean and upon payment of the penalty fee, late registration may be permitted for a serious reason; however, no student may be registered and begin attending classes later than the Latest Date for Change of Schedule as announced in the Academic Calendar.

RECORDS AND REPORTS

SEMESTER GRADE REPORTS

Every registered student who is free of financial obligations to the University is sent a report of grades to the permanent address on record soon after the close of each semester.

TRANSCRIPTS

Each student receives a summary transcript of his or her complete academic record at the close of each academic year. Students should carefully examine their record for accuracy and immediately report errors to the Registrar.

To obtain additional copies of their academic records students must write to the Registrar for transcripts for themselves or for other institutions and agencies. All *official* transcripts issued by the Office of the Registrar bear the signature of the Registrar and the embossed seal of the Office of the Registrar. Whenever an *official* transcript is released directly to the student it will also bear the stamped designation, *Issued to Student*.

No transcript will be issued unless all financial obligations owed by the student to the University have been fulfilled. A fee of \$2.00 is charged for the issuance of each transcript.

CONFIDENTIALITY OF STUDENT RECORDS

The University regards the student's personal information and academic record as a matter of confidence between the student and the University. The contents of either may be revealed only in accordance with the Family Educational Rights and Privacy Act of 1974 (Public Law 93-380, Section 438, as amended).

Scholastic Policies

ACADEMIC ADVISOR

Every student attending the University is assigned or selects an academic advisor. It is the student's responsibility to ascertain the advisor's name which may be obtained from the office of the school in which the student is enrolled.

The student should consult with the academic advisor about the program and any questions of an academic nature. No student may register without the academic advisor's approval and signature.

AUDITING COURSES

To audit courses, a student must be officially registered and pay the same charges as for courses that are taken for credit. Enrollment in a course for audit is subject to approval of the student's academic advisor; permission to audit graduate and professional courses requires consent of the dean of the school in which the desired course is offered.

CANCELLATION OF COURSES

The University makes every reasonable effort to offer courses as announced in the Semester Schedule of Courses and the Summer Session Bulletin. It reserves the right, however, to make changes or cancel courses in the academic schedule because of insufficient enrollment or for any other equally valid reason.

CLASS ATTENDANCE

Regular class attendance is normally essential for maximum educational advantage and is strongly encouraged. The responsibility for all course material rests wholly with the student. Class attendance shall not be used as the basis for altering a grade in a course.

It is the prerogative of each school to establish policy for attendance at tests and examinations, deadlines for reports, and specific school or course requirements. It is the instructor's responsibility to make the school's policy known at the first class session as it pertains to the course.

Details about class attendance in schools that have specific policies will be found in the latter sections of this catalog.

CLASSIFICATION OF STUDENTS

Freshman: less than 30 credits completed.

Sophomore: 30 to 59 credits completed.

Junior: 60 to 89 credits completed.

Senior: 90 or more credits completed.

1. *Full-time Student.* A student with an academic schedule of at least 12 credits is considered a full-time student. With this status a student is entitled to the benefits of various activities. A student may not change status during

the semester without the permission of the academic advisor and the Dean of the student's school.

2. *Part-time Student.* Anyone who carries under 12 credits is regarded as a part-time student.

3. *Post-graduate Student.* A person who has completed a baccalaureate degree and is seeking additional undergraduate credits.

COURSE EXAMINATIONS

Unit examinations are given on the dates announced at the beginning of each semester by the instructor. Grades for these are obtained from the instructor.

Final examinations are given at the end of each semester and summer session according to the registrar within 72 hours after the final examination. No student is excused from taking the final examination.

CREDIT BY EXAMINATION

Courses in which a student feels he or she has sufficient competence, may be "challenged" by taking an examination for credit. If the examination is passed, the credits will count for graduation, but neither grade nor quality points will be assigned. A fee of \$10 a credit hour is charged.

GRADING SYSTEM

The officially recognized method of grading course work and rating academic performance of students at the University is as follows:

- A — Excellent
- B — Good
- C — Average
- D — Below average; passing
- P — Pass (Used in some courses where scaled grading is inappropriate. Indicates satisfactory completion of course work with credits earned but without quality points and is independent of the quality point system)
- S — Satisfactory (Used in pass/fail courses and is independent of the quality point system)
- F — Failure (Course must be repeated for credit)
- U — Unsatisfactory—Failure (Used in pass/fail courses and is independent of the quality point system; course must be repeated for credit)
- I — Incomplete (A temporary grade automatically given by an instructor when neither a passing nor failing grade can be determined because of incomplete course work or non-attendance of a student in a class. Unless a cogent explanation of extenuating circumstances, acceptable to the instructor, is presented and the missed examination or required assignment is made up by the date specified in the Academic Calendar, the I becomes a permanent F grade)

- X — Absent from Final Examination. This grade was superseded in September, 1974 for undergraduate course evaluation by the I grade.
- W — Official Withdrawal (Used on a student's permanent record to indicate termination of attendance in courses under conditions of official withdrawal. See pages 211 and 212, Withdrawal from a Course and Withdrawal from the University)

QUALITY POINT SYSTEM

The student's overall academic quality point average (QPA) is obtained by dividing the total quality points earned by the total number of semester hours attempted. These quality point values of grades are used for each credit attempted:

- A — four points
- B — three points
- C — two points
- D — one point
- F — zero points

Courses in which grades P,S,U,I, and W were given are not used in calculating the quality point average.

REPEATING COURSES AND COURSE RETROGRESSION

Ordinarily, with permission of their advisor, students may repeat courses in which grades of F and D were received. All grades are retained on the permanent academic record. The result of the final attempt in a repeated course is, however, the student's status in the course with regard to attempted credits, earned credits, and the completion of requirements.

Courses which must be taken in progression are those that have a required sequence, such as mathematics and modern languages. A student who has received an F for a prerequisite course may not continue in the sequential progression. A student who has earned a D grade in a course in a sequence may either repeat the course or go on in the sequence. If he goes on, he may not retake for credit at a later date that course in which he earned the D grade.

PASS/FAIL ELECTIVES

One course a semester, elected by a junior or senior and approved by the academic advisor as providing an opportunity to expand and enrich the student's experience, may be taken on a pass/fail (S-U) basis. If passed, the credits will count for graduation, but neither grade nor credits will be calculated in the quality point average.

Once a course has been identified as a pass/fail elective, the course must be completed as such, and the grade submitted must be an S or a U. No required course may be taken on this elective pass/fail basis; however, the P grade is

used in some courses where scaled grading is inappropriate. The decision to elect the pass/fail option must be made during registration or no later than the close of the period provided for making schedule changes.

STUDENT STANDING

Progress towards a degree is measured by the cumulative, quality point average. The scholastic records of students who fail to meet the minimum requirements as established by the faculty of each college or school will be submitted to the College or School Committee on Student Standing for review and appropriate action. Normally, academic records will be reviewed annually at the conclusion of each academic year; therefore, students who fail to meet the minimum standards for retention in the Fall Semester may be permitted to continue their studies during the Spring Semester.

Students who are eligible to re-enroll on a full-time basis shall be considered in good standing and eligible to participate fully in all University-sponsored or -controlled extra-curricular activities, including intercollegiate athletics. Students with marginal records of achievement (less than a 2.0 QPA) are subject to the jurisdiction of the appropriate Committee on Student Standing and will be evaluated according to the established guidelines.

For students who have attempted 15-30 credits, or more than 30 credits in one year, the guidelines are:

Academic Warning:	1.75 to 1.99 QPA (Letter of warning may be sent by appropriate Dean)
Probation:	1.50 to 1.74 QPA (Subject to the jurisdiction of the appropriate Committee on Student Standing and may be required to modify or restrict academic program)
Dismissal:	Less than 1.50 QPA (Readmission may be permitted on recommendation of the appropriate Committee on Student Standing)

For the students who have attempted 31-60 credits or who have attempted up to 61 credits within four semesters, these guidelines prevail:

Academic Warning:	1.85 to 1.99 QPA (Letter of warning may be sent by appropriate Dean)
Probation:	1.75 to 1.84 QPA (Subject to the jurisdiction of the appropriate Committee on Student Standing and may be required to modify or restrict academic program)
Dismissal:	Less than 1.75 QPA (Readmission may be permitted on recommendation of the appropriate Committee on Student Standing)

Students who have attempted 61 or more credits and who have a QPA of between 1.85 and 1.99 may continue on probation for one semester. However, students who have earned more than 90 credits are subject to dismissal

unless they have a QPA of 2.0 or better. Students who accumulate three F grades in one semester are subject to dismissal. Appeals of academic dismissal must be directed to the appropriate College or School Committee on Student Standing.

DEAN'S LIST

To achieve distinction of being named to the Dean's List, a student must have a record for a semester that shows completion of a full-time schedule, a quality point average of at least 3.25, and no grade lower than C. The full-time schedule must include at least 12 credits exclusive of pass/fail credits.

GRADUATE COURSES FOR UNDERGRADUATE CREDIT

Qualified seniors may be permitted to register in certain graduate courses at the 500 level for undergraduate credit on the recommendation of the advisor and with the approval of the dean of the graduate school involved. All 500 courses are described in the graduate school catalogs.

GRADUATION REQUIREMENTS

The candidate for a University degree must be a person of good moral character who has satisfactorily completed all academic requirements for the degree program and in addition has the recommendation of the appropriate Academic Dean, filed the Application for the University Degree with the Office of the Registrar on or before the latest date to apply for graduation as announced in the Academic Calendar, and paid all indebtedness to the University.

It is the student's responsibility to determine that the courses taken in each semester are sequentially correct and necessary for the degree program.

The student must periodically review in consultation with the appropriate academic advisor progress toward graduation and seek, with the advisor, the resolution of any question about fulfillment of graduation requirements.

Each school and each department sets forth in this catalog requirements for graduation which the student is expected to know, as well as the aforementioned general requirements, and the following:

1. The bachelor's degree requires a minimum of 120 semester hours of course credits in all except Radiological Health, Medical Technology, and Pharmacy which require, respectively, 123, 125, and 160 credits.
2. All bachelors' degrees require an overall minimum quality point average of 2.0, which is a C grade average in a 4.0 system. (Students should further determine the need for minimum QPA requirements in their major, science course, etc.)
3. The last year's work (a minimum of 30 semester hours of credit) must be completed in residence at the University.
4. Not less than three credits (or one course) in theology are required for all undergraduate Catholic students in every program at the University. This is a general requirement; individual schools may require alternate or additional course work in this area.

5. Students on academic probation may be candidates for graduation only with permission of the Committee on Student Standing of their school.

The candidate who has satisfied graduation requirements by a Challenge Examination (credit by examination), when taken timewise within the last 30 semester hours of study for the degree, will fulfill the residence requirement provided a minimum of 30 semester hours of credit has been earned in course work at the University in the last year's study.

HONORS

Degrees are awarded with special mention *cum laude*, *magna cum laude*, or *summa cum laude* to students who have completed the regular course with unusual distinction and who have completed a minimum of 60 credits in residence. Honors are based on these standards:

- Cum Laude—Quality Point Average 3.50 to 3.74
- Magna Cum Laude—Quality Point Average 3.75 and above
- Summa Cum Laude—Upon recommendation of the faculty and a 3.90, Magna Cum Laude citation may be raised to Summa Cum Laude.

UNIT OF CREDIT

The unit of credit is the semester hour; i.e., one credit equals one semester hour. One semester hour of credit is granted for the successful completion of one hour a week of lecture or recitation, or at least two hours a week of laboratory work for one semester of 15 weeks.

TRANSFER WITHIN THE UNIVERSITY

It would be to the student's advantage to discuss the proposed transfer with the academic advisor of the new school no later than two weeks prior to preregistration. The advisor will then use the form and procedure established as uniform for the University to effect any change.

WITHDRAWAL FROM A COURSE

First semester freshmen may withdraw from courses with the approval of their advisor up to the period of final examinations and receive a grade of W by processing the proper form.

If a student, other than a first semester freshman, wishes to withdraw from a course, he may do so with the approval of his academic advisor and by processing the proper form up to the date announced in the Academic Calendar for withdrawal with a W grade.

If a student wishes to withdraw from a course after the date announced in the Academic Calendar, the student must seek approval of the Committee on Student Standing of the student's School. The student will be notified of the Committee's decision. If approval is granted, the student then initiates the appropriate form through the advisor.

A student who is not granted approval of the request and withdraws from the course unofficially will receive an F grade for the course.

WITHDRAWAL FROM THE UNIVERSITY

If a student finds it necessary to withdraw from all courses before the close of the semester, the student must write a letter stating the reasons for the withdrawal and then must present this letter to the Dean of the student's school. Complete withdrawal forms must be filled out for the Dean of the school, with copies to the appropriate offices. The policy for assigning grades will be the same as for withdrawing from a single course. A student who withdraws from the University and fails to notify the appropriate Academic Dean immediately and adequately will receive an F grade in all courses.

A resident student must notify the Director of Residence Life in advance of the planned withdrawal. No refund of room charges will be made where withdrawal occurs after the opening classes. In the event of withdrawal, board will be refunded at the rate of 75 per cent of the balance remaining on the student's meal plan, up until mid-semester. After the mid-semester point, no refund will be made. No reduction of charges nor refund of payments to which a student may have been otherwise entitled will be made if withdrawal is not in accordance with the official withdrawal procedure.

No student is permitted to remain in the residence halls after academic withdrawal from the University has been completed. After final examinations, if a student is unable to return for the next semester, he or she should notify the appropriate Dean and advisor.

Part VI: Directories



Directors and Officers

BOARD OF DIRECTORS

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Rev. Edward L. Murray, C.S.Sp., Ph.D. . . *Academic Vice President*

Rev. Frederick R. Clark, C.S.Sp., Ph.D. *Vice President
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Rev. Joseph A. Lauritis, C.S.Sp., Ph.D. *Secretary of the University*

**Ex-officio*

***Emeritus*

****Non-voting*

Administration and Faculty

College of Liberal Arts and Sciences

ADMINISTRATION

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 Marguerite S. Puhl, M.Ed. *Assistant Dean for Administration*
 Helena A. Miller, Ph.D. *Assistant Dean for
 Special Studies*
 Madeline F. Huck, M.A. *Director of Advisement*
 Joan E. Deakins *Assistant to the Dean*

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 Notre Dame

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Lecturer in Speech
 B.S., California State College
 M.S., West Virginia University
 Ph.D., University of Pittsburgh

Mary Frances Antolini
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Index

Academic		
Advisor	206	
Calendar	iii	
Load—Arts and Sciences	13	
Policies	3	
Regulations—Art and Sciences	13	
Year and Summer Sessions	4	
Accounting Curriculum	72	
Accreditation and Affiliation	6	
Activities and Facilities	172	
Athletics	172	
Duquesne Union	173	
Program Board	173	
Systems Center	174	
Tamburitzans	173	
Theatre	174	
WDUQ Radio and Television	174	
Administration		
and Faculty	215	
Building	4	
Administrative Divisions	243	
Academic	243	
Business and Financial	244	
Campus Ministry	247	
Student Services	245	
University Committees	248	
University Relations	246	
Administrative Officers	214	
Admission		
Application—New First Year Students	180	
Other Categories	180	
Office	179	
Early	180	
International Students	181	
Policy	179	
Post Graduates	181	
Readmission	182	
Requirements	179	
Rolling	179	
Summer Session	182	
Duquesne Students	182	
Other Institutions	183	
Transfers	182	
Academic Year	182	
Summer Session	182	
Temporary	182	
Admission, Special Requirements		
Education	86	
Music	100	
Nursing	130	
Pharmacy	146	
Advanced Placement	183	
Advisor, Academic	206	
Air Force ROTC	165	
Application		
Fee	185	
for Financial Aid	192	
New First-Year Students	180	
Early Admission	180	
Other Categories	180	
International Students	181	
Post-Graduates	181	
Readmission	182	
Summer Session	182	
Duquesne Students	182	
Students from Other Institutions	183	
Transfers	182	
Temporary	182	
Applied Music Courses	110	
Army ROTC	162	
Arts and Sciences Courses		
Biological Sciences	14	
Chemistry	17	
Classics	20	
Earth Science	47	
Economics	22	
English	23	
Fine Arts	26	
French	39	
German	40	
Greek	20	
History	28	
Italian	40	
Journalism	33	
Latin	20	
Mathematics	36	
Modern Languages	38	
Philosophy	41	
Physics	44	
Political Science	48	
Psychology	51	
Russian	40	
Sociology	53	
Spanish	40	
Speech Communication and		
Theatre	56	
Theology	60	
Assumption Hall	4	
Athletics	172	
Attendance, Class	206	
Auditing Courses	206	
Auditor's Fee	185	
Bachelor-Master's Program	13	
Bachelor's Degree Fee	186	
Bachelor's-Professional School		
Program	13	
Bad Checks	189	

Bank Credit Cards	189	Cashing Checks	189
Basic Education Opportunity Grants	194	Center for	
Bassoon Courses	111, 117	Academic and Career Development	169
Behavioral Science, Division of	76	Administration of Legal Systems	68
International Business	77	Economic Education	69
Law Administration	78	International Management	69
Management	79	Management Development	69
Marketing	80	Certification	
Pre-Legal	78	Music	102
Biological Sciences		School Nurse	135
Courses	15	Subject Area Requirements	91
Department of	14	Teacher	88
Requirements for Major	14	Certified Public Accountant	
Requirements for Minor	15	Requirements	72
Board of Directors	214	Change of Schedule	204
Buildings	4	Fee	185
Bureau of Research		Checks	
and Community Services	68	Bad	189
Business and Administration		Cashing	189
School of	67	Chemistry	
Bureau of Research and Community		Courses	18
Services	68	Department of	17
Bureau of Research	68	Requirements for Majors	18
Center for		Requirements for Minors	18
Administration of Legal Systems	68	Clarinet Courses	111, 117
Economic Education	69	Class Attendance	88, 206
International Management	69	Classics	
Center for Management		Courses	20
Development	69	Department of	20
Course Descriptions		Requirements for Major	20
Accounting	72	Requirements for Minor	20
Economic Science	82	Classification of Students	206
Finance	73	Full-time	206
International Business	77	Part-time	207
Law Administration	78	Post-Graduate	207
Management	79	Clinical Pharmacy, Department of	157
Marketing	80	College Hall	5
Quantitative Methods	76	College Level Examination Program ...	13, 183
Curriculums		College of Liberal Arts and Sciences	
Accounting	72	<i>See</i> Liberal Arts and Sciences,	
Economic Science	82	College of	
Finance	73	Committees	
International Business	77	Athletic	247
Law Administration	78	Scholarships and Financial	
Management	79	Assistance	247
Marketing	81	University	247
Quantitative Methods	76	Competitive Scholarships	192
Degree	68	Confidentiality of Student Records	205
Divisions and Programs	70	Costs. <i>See</i> Fees and Tuition	
Behavioral Science	76	Course	
Economic Science	82	Examinations	207
Quantitative Science	72	Retrogression	208
History	67	Course Descriptions	
Philosophy and Objectives	67	Arts and Sciences	14
Sample Program	70	Business and Administration	72
Scholarships and Loans	196	Education	93
Student Organizations	69	Music	110
Calendar, Academic	iii	Nursing	135
Cancellation of Courses	206	Pharmacy	153
Campus Ministry	169, 247	ROTC	165
Canevin Hall	4	Courses	
Career Planning and Placement	169	Auditing	206
		Cancellation of	206

Repeating	208	Economics	22
Retrogression	208	English	23
Credit		Fine Arts	26
by Examination	14, 207	History	28
Hour Bank	184	Journalism	33
Unit of	211	Mathematics	36
Cross-Registration	204	Modern Languages	38
Curriculums		Philosophy	41
Arts and Sciences	11	Physics	44
Bachelor-Master's	13	Political Science	48
Bachelor's/Professional School	13	Psychology	51
Pre-Engineering	12	Sociology	53
Pre-Law	12	Speech Communication and Theatre	56
Pre-Medical	13	Theology	60
Second Bachelor's Degree	13	Departments, School of Pharmacy	
Three-Year Bachelor's	13	Clinical Pharmacy	157
Business and Administration	70	Medical Technology	157
Accounting	72	Pharmaceutical Administration	156
Economic Science	82	Pharmaceutical Chemistry and	
Finance	73	Pharmaceutics	153
International Business	77	Pharmacognosy	155
Law Administration	78	Pharmacology-Toxicology	155
Management	79	Radiological Health	158
Marketing	80	Developmental Services	169
Pre-Legal	78	Campus Ministry	169
Qualitative Methods	76	Career Planning and Placement	169
Education	88	Center for Academic and	
Early Childhood	88	Career Development	169
Elementary	89	Health Insurance	172
Music	90, 107	Health Services	172
Secondary	91	International Student Advisement	171
Special Education	93	Learning Skill Program	170
Music	103	Psychological Center for Training	
Music Education	107	and Research	171
Music Therapy	108	Residence Life	171
Orchestral Instrument	106	Testing Bureau	170
Organ	104	Directors, Board of	214
Piano	103	Divisions, School of Business and	
Sacred Music	109	Administration	
Voice	105	Behavioral Science	76
Nursing	134	Economic Science	82
Pharmacy	141	Quantitative Science	76
Medical Technology	144	Double Bass Courses	111, 117
Radiological Health	145	Dormitories	
ROTC	162	Assumption Hall	4
Damage Deposit, Resident Hall	185, 187	Duquesne Towers	5
Dean's List	210	Expenses	187
Deferred Payment	188	St. Ann Hall	5
Degree		St. Martin Hall	5
Arts and Sciences	12	Dropping and Adding Courses	204
Awarded with Honors	211	Duquesne	
Business and Administration	68	Duke (Newspaper)	176
Education	88	Magazine	176
Music	101	Towers	5
Nursing	129	Union	5, 173
Pharmacy	184, 187	Program Board	173
Requirements	12, 70, 88-93, 103-110		
	134, 141-145, 210	Early Admission	180
Degrees and Programs Offered	2	Early Childhood Education	
Departments, College of Liberal Arts		Courses	95
and Sciences		Program	88
Biological Sciences	14	Earth Science Courses	47
Chemistry	17	Economic Science, Division of	82
Classics	20	Curriculum	82

- Economics
 Courses 82
 Department of 22
 Requirements for Major 22
 Requirements for Minor 22
 Education, School of 86
 Admission 86
 Class Attendance 88
 Course Descriptions 93
 Early Childhood 95
 Educational Foundations and
 Psychology 93
 Elementary 95
 Secondary 96
 Special 96
 Curriculum 86
 Degree 88
 General Education 86
 History 86
 Honor Awards 87
 Laboratory Experiences 87
 Professional Education 87
 Programs 88
 Early Childhood 88
 Elementary 89
 Music 90, 107
 Secondary 91
 Special Education 92
 Scholarships 186
 Selection and Admission 86
 Student Organizations 87
 Teacher Certification 88
 Educational Foundations and
 Psychology 93
 Effective Catalog-Arts and Sciences 13
 Elementary Education
 Courses 95
 Program 89
 English
 Courses 24
 Department of 23
 Honors Program 24
 Requirements for Major 23
 Requirements for Minor 23
 Ensemble Courses 122
 Eurhythmics 122
 Evening Study 8
 Examinations
 Advanced Placement 183
 Credit by 267
 Final 207
 Expenses. *See* Tuition and Fees
 Facilities, Physical 2
 Faculty, Administration and
 Arts and Sciences 215
 Business and Administration 224
 Education 227
 Music 229
 Nursing 234
 Pharmacy 238
 ROTC 242
 Fees and Tuition. *See* Tuition and Fees
 Finance Curriculum 73
 Financial Aid 190
 Application—University Aid 192
 Award Conditions 190
 Basic Educational Opportunity
 Grants 194
 Competitive Scholarships 192
 Current Information 191
 Financial Need 190
 Gift Assistance 191
 Guaranty Student Loan 194
 Health Profession Loans 193
 Health Profession Scholarships 193
 Meeting Student Need 191
 National Direct Student Loans 193
 Need 190
 Nurses Training Act Loans 193
 Nursing Scholarships 193
 Other Scholarships and Loans 195
 Pennsylvania State Grants 194
 Principles of 190
 Program Funding 191
 Programs 192
 ROTC Scholarships 165
 Sources of 192
 State Grant Assistance 194
 Student Employment 193
 Supplemental Educational Opportunity
 Grants 193
 University Scholars Awards 192
 Financial Aid—Departments and
 Schools 195
 Business and Administration 196
 College of Liberal Arts and Sciences 195
 Education 196
 Music 196
 Nursing 197
 Pharmacy 197
 ROTC Scholarships 165, 199
 Fine Arts
 Courses 26
 Requirements for Minor 27
 Flute Courses 11, 117
 French Courses 39
 Freshmen, Admission of 180
 Full-Time Students 206
 General Education 86
 German Courses 40
 Grade Reports, Semester 205
 Grading System 207
 Graduate Courses for Undergraduate
 Credit 210
 Graduation
 Fees 186
 Honors 211
 Requirements 210
 Greek Courses 20
 Guaranty Student Loans 194
 Gymnasium 5
 Harp Courses 112, 117
 Health Profession Loans 193

Scholarships	193	Speech Communication and	
Health		Theatre	56
Insurance	172	Theology	60
Services	172	Credit by Examination	14
History		Curricular Requirements	11
Courses	29	Effective Catalog	13
Department of	28	History	11
Requirements for Major	29	Philosophy and Objectives	11
Requirements for Minor	29	Programs	12
The University	1-3	Scholarships	195
Honors, Graduation	211	Library	6
Honors Awards		Loans and Scholarships. <i>See</i>	
Education	86	Scholarships and Loans	
Music	102	Management Curriculum	79
Nursing	132	Marketing Curriculum	81
Pharmacy	149	Mathematics	
Honor Societies	175	Courses	36
Horn Courses	112, 118	Department of	36
Housing. <i>See</i> Dormitories		Requirements for Major	36
		Requirements for Minor	36
Inter-Fraternity Council	175	Matriculation Deposit	185
International		Medical Technology, Department of	157
Student Advisement	171	Mellon Hall of Science	5
Students, Admission of	181	Military Science, Department of	162
Italian Courses	40	Ministry, Campus	169; 247
Journalism		Modern Languages	
Courses	34	Courses	39
Department of	33	Department of	38
Requirements for Major	33	French Courses	39
Requirements for Minor	33	German Courses	40
Laboratory Fees		Italian Courses	40
General	185	Requirements for Major	39
Nursing	131	Requirements for Minor	39
Pharmacy	147	Russian Courses	40
Late Registration Fee	185	Spanish Courses	40
Latin Courses	20	Music Education	90, 107
Law Administration Curriculum	78	Music, School of	3, 99
Learning Skill Program	170	Admission	100
L'Esprit du Duc (Yearbook)	176	Advisement	100
Liberal Arts and Sciences, College of	11	Course Descriptions	110
Academic		Applied Music	110
Load	13	Bassoon	111, 117
Regulations	13	Clarinet	111, 117
Requirements	12	Double Bass	111, 117
Course Descriptions	14	Flute	112, 117
Biological Sciences	14	Guitar	112, 117
Chemistry	17	Harp	112, 117
Classics	20	Horn	112, 118
Economics	22	Oboe	113, 118
English	23	Organ	113, 118
Fine Arts	26	Percussion	113, 119
History	28	Piano	114, 119
Journalism	33	Saxophone	114, 119
Mathematics	36	Trombone and Baritone Horn	114, 120
Modern Languages	38	Trumpet	115, 120
Philosophy	41	Tuba	115, 120
Physics	44	Viola	115, 121
Political Science	48	Violin	115, 120
Psychology	51	Violoncello	116, 121
Sociology	53	Voice	116
		Conducting	121
		Ensemble	122

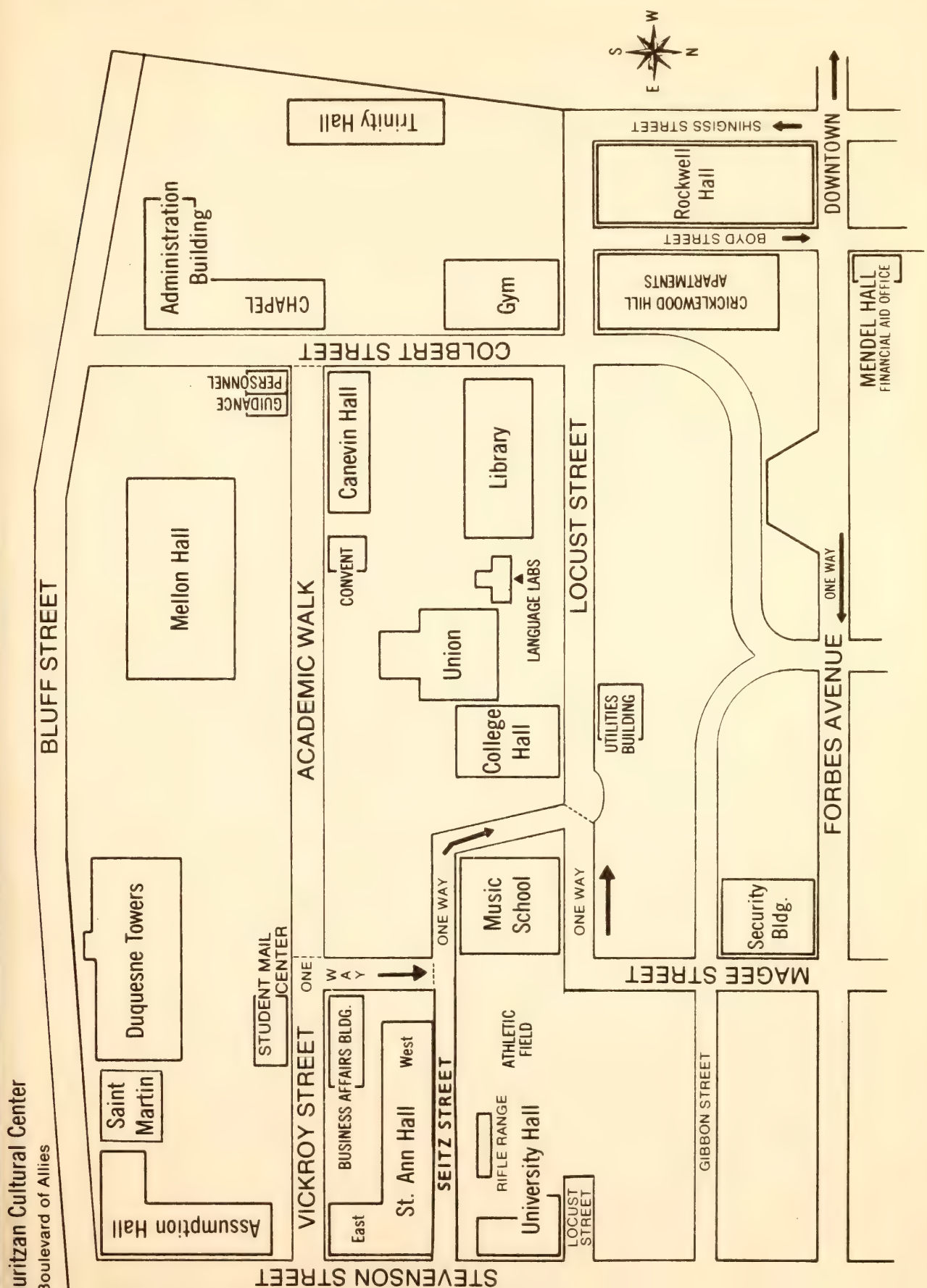
Eurhythmics	122	Pass/Fail Electives	208
General Education	127	Payments and Other Credits	188
Music Education	122	Bad Checks	189
Music History, Literature and Art	124	Bank Credit Cards	189
Music Theory	125	Cashing Checks	189
Music Therapy	125	Deferred Payment	188
Non-Music Majors	127	Scholarships	189
Sacred Music	126	Student Financing Program	188
Tamburitzens Institute of		Percussion Courses	113, 119
Folk Arts	126	Pharmaceutical Administration,	
Degrees	101	Department of	156
Equipment	101	Pharmaceutical Chemistry and Pharma-	
Fees, Special	100	ceutics, Department of	153
History	99	Pharmacists, State Licensing of	151
Honor Awards	102	Pharmacognosy, Department of	155
Philosophy and Objectives	99	Pharmacology-Toxicology, Department of	155
Programs	102	Pharmacy, School of	139
Music Education	107	Activities Fee	147, 185
Music Therapy	108	Admission	146
Orchestral Instrument	106	Career Guidance Center	152
Organ	104	Course Descriptions	153
Piano	103	Clinical Pharmacy	157
Sacred Music	109	Medical Technology	157
Voice	105	Pharmaceutical Administration	156
Recital Attendance	102	Pharmaceutical Chemistry	
Scholarships	196	and Pharmaceutics	153
Student Organizations	101	Pharmacognosy	155
Teacher Certification	102	Pharmacology-Toxicology	155
Theology Requirement	102	Professional Electives	159
		Radiological Health	158
National Direct Student Loans	193	Curriculum Majors	142
Nurses Training Act Loans	193	Degrees	140, 143, 145
Nursing, School of	129	Fees, Laboratory	147
Admission of Registered Nurse		Graduation Requirements	151
Students	131	History	139
Admission Requirements	130	Honor Awards	149
Course Descriptions	135	Philosophy and Objectives	139
Curriculum Standards	134	Professional Electives	159
Fees, Special	131	Programs	140
Graduation Requirements	132	Pharmacy	140
History	129	Medical Technology	143
Honor Awards	132	Radiological Health	145
Objectives	130	Research Foundation	152
Philosophy	129	Regulations	147
Program of Study	133	Scholarships and Loans	197
Registered Nurses	133	State Licensing	151
Scholarships	197	Pennsylvania	151
School Nurse		States Other Than Pennsylvania	152
Certification	135	Student Organizations	148
Degree Curriculum for	135	Philosophy and Objectives	
Second Baccalaureate Degree		University	3
Program	131	Philosophy	
Student Organizations	132	Courses	42
Suggested Curriculum Plan	134	Department of	41
Nursing Scholarships	193	Requirements for Major	41
		Requirements for Minor	41
Oboe Courses	113, 118	Physics	
Officers, Administrative	214	Courses	45
Organ Courses	113, 118	Department of	44
Organizations, <i>See</i> Student Organizations		Earth Science	45
		Requirements for Major	45
Pan-Hellenic Council	175	Requirements for Minor	45
Part-Time Students	207	Physical Facilities	4

- Piano Courses 114, 119
- Placement Center, Career Planning and 169
- Political Science
- Courses 49
- Department of 48
- Requirements for Major 48
- Requirements for Minor 48
- Post-Graduate Students, Admission of 181
- Pre-Engineering Program 12
- Pre-Law Program 12
- Pre-Legal Program 78
- Pre-Medical Program 12
- Professional
- and Departmental Organizations 75
- Education 87
- Fraternities and Sororities 175
- Laboratory Experiences 87
- Programs
- Arts and Sciences 12
- Business and Administration 70
- Education 88
- Music 102
- Nursing 134
- Pharmacy 141
- ROTC 162
- Psychological Center for Training and Research 171
- Psychology
- Courses 52
- Department of 51
- Requirements for Major 51
- Requirements for Minor 52
- Publications 176
- Duquesne Duke (Newspaper) 176
- Duquesne Magazine 176
- L'Esprit du Duc (Yearbook) 176
- Quality Point System 208
- Quantitative Science, Division of 72
- Accounting 72
- Finance 73
- Quantitative Methods 76
- Radio and Television 174
- Radiological Health, Department of 158
- Readmission 182
- Records and Reports 205
- Confidentiality of
- Student Records 205
- Semester Grade Reports 205
- Transcripts 205
- Red Masquers 174
- Refund
- Room and Board 188
- Tuition 187
- Registration 203
- Change of Schedule 204
- Cross 204
- Official 203
- Late 205
- Regulations for Pharmacy Students 147
- Requirements for Graduation 210
- Repeating Courses 268
- Reserve Officer Training Corps 162
- Air Force ROTC 165
- Army ROTC Scholarships 165
- Course Descriptions 165
- Department of Military Science 162
- Four-Year Program 162
- Sample Program 163
- Military Science Minor 164
- Programs 162
- Scholarships 193
- Residence
- Council 175
- Life 171
- Residences, Student. *See* Dormitories
- Resident Hall Pre-Payment Fee 185
- Rockwell Hall 5
- Rolling Admission 179
- Room and Board 187
- Costs 187
- Refund 188
- ROTC. *See* Reserve Officers Training Corps
- Russian Courses 40
- St. Ann Hall 5
- St. Martin Hall 5
- Saxophone Courses 114, 119
- Scholarships, Credit toward Tuition 189
- Scholarships and Loans—General
- Application—University Aid 192
- Basic Educational Opportunity
- Grants 194
- Competitive Scholarships 192
- Guaranty Student Loans 194
- Health Profession Loans 193
- Health Profession Scholarships 193
- National Direct Student Loans 193
- Nurses Training Act Loans 193
- Nursing Scholarships 193
- Other Scholarships and Loans 195
- State Grants 194
- Student Employment 193
- Supplemental Educational
- Opportunity Grants 193
- University Scholars Awards 192
- Scholarships and Loans—Departments and Schools
- Arts and Sciences 195
- Business and Administration 196
- Education 196
- Music 196
- Nursing 197
- Pharmacy 197
- ROTC 199
- Scholastic Policies 206
- School Year 4
- Schools
- Arts and Sciences 11
- Business and Administration 67
- Education 86
- Music 99
- Nursing 129
- Pharmacy 139
- Second Bachelor's Degree 13

- Secondary Education
 Courses 96
 Program 91
 Semester
 Grade Reports 205
 Tuition 185
 Service Organizations 176
 Social Organizations 176
 Sociology
 Courses 54
 Department of 53
 Requirements for Major 54
 Requirements for Minor 54
 Spanish Courses 40
 Speech Communication and Theatre
 Areas of Concentration 56
 Courses 58
 Department of 56
 Requirements for Major 57
 Requirements for Minor 58
 Special Education
 Courses 96
 Program 92
 Sports. *See* Athletics
 State
 Licensing of Pharmacists 151, 152
 Grant Assistance 191
 Student
 Government Association 174
 Financing Program 188
 Handbook 176
 Housing. *See* Dormitories
 Organizations 175
 Business and Administration 69
 Education 87
 Music 101
 Nursing 132
 Pharmacy 148
 Records, Confidentiality of 205
 Standing 209
 Student Government 174
 Association 174
 Inter-Fraternity Council 175
 Pan-Hellenic Council 175
 Residence Council 175
 Student Organizations 175
 Honor Societies 175
 Professional and Departmental
 Organizations 175
 Publications 176
 Service Organizations 176
 Social Organizations 176
 Tamburitzans 173
 Theatre 174
 WDUQ Radio and Television 174
 Student Standing 209
 Students, Classification of 206
 Summer and Special Session Tuition
 and Fee Charges 186
 Summer Session 8, 182
 Duquesne Students 182
 Transfer Students 183
 Summer Sessions 8
 Academic Year and 4
 Supplemental Educational Opportunity
 Grants 193
 Systems Center 174
 Tamburitzans 173
 Teacher Certification
 Education 88
 Music 102
 Subject Area Requirements 91
 Television, Radio and 174
 Temporary Transfer Students, Admission of
 Academic Year 182
 Summer Session 182
 Testing Bureau 170
 Theatre 174
 Theology
 Courses 61
 Department of 60
 Requirement 12, 71, 86, 102
 Requirements for Major 61
 Requirements for Minor 61
 Three-Year Bachelor's Program 13
 Transcripts 205
 Transfer Within the University 211
 Transfer Students, Admission of 182
 Temporary 182
 Temporary—Summer 182
 Trinity Hall 5
 Trombone Courses 114, 120
 Trumpet Courses 115, 120
 Tuba Courses 115, 120
 Tuition and Fees
 Application Fee 185
 Auditor's Fee 185
 Bad Checks 189
 Bank Credit Cards 189
 Cashing Checks 189
 Change of Schedule Fee 185
 Credit by Examination Fee 185
 Damage Deposit, Resident Hall 185, 187
 Deferred Payment 188
 Financing Program, Student 188
 Graduation Fees 186
 Laboratory Fees 185
 Late Registration Fee 185
 Matriculation Deposit 185
 Payments and Other Credits 188
 Refund, Room and Board 188
 Remission of Tuition 187
 Removal of I Grade 185
 Resident Hall Pre-Payment 185
 Room and Board 187
 Scholarships 189
 Special Fees
 Music 100
 Nursing 131
 Pharmacy 147
 Summer and Special Session 186
 Tuition 185
 University Fee 185

Withdrawal and Termination		
of Attendance	186	
Tuition Remission Schedule		
Within the Semester	187	
Within the Summer Session	187	
Union Program Board	173	
Unit of Credit	211	
University		
Accreditation and Affiliation	6	
Administrative Divisions	243	
Academic	243	
Business and Financial	244	
Student Services	245	
Administrative Officers	214	
Board of Directors	214	
Buildings	4	
Campus Ministry	247	
Committees	247	
Hall	4-5	
History	3	
Library	4-6	
Philosophy and Objectives	1-3	
Relations	246	
Scholars Awards	192	
Setting	— 4	
Viola Courses	115, 121	
Violin Courses	115, 120	
Violoncello Courses	116, 121	
Voice Courses	116	
WDUQ Radio and Television	174	
Withdrawal		
and Termination of Attendance	186	
from a Course	211	
from the University	212	
Women's Sports. <i>See</i> Athletics		

Duquesne University Campus



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Pittsburgh, Pennsylvania 15219

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